# SCHOOL LIFE

*Official Journal of the . . .*

OFFICE OF EDUCATION

The Language Laboratory
JOSEPH C. HUTCHINSON

The Education of Deaf Children
S. RICHARD SILVERMAN AND LEONARD M. ELSTAD

JANUARY–FEBRUARY 1964

CONTENTS


3 Notes on the notable

5 Cost of new science programs
*William J. Gruver*

8 Doors were opened
*Smith* and *Miller*

11 Targets for teacher preparation
*John B. Whitelaw*

14 The language laboratory
*Joseph C. Hutchinson*

18 Fall survey of public schools
*Hobson* and *Schloss*

24 Educating deaf children
*S. Richard Silverman*

28 Broad horizons for the deaf
*Leonard M. Elstad*

30 Education for maturity
*Halbert L. Dunn*

35 Adminutes

37 School bonds
*Deering* and *Bokelman*

41 The library reporter
*Richard L. Darling*

42 Professional college staff
*Rose Marie Walker*

44 Government publications

LYNDON B. JOHNSON

*President Johnson, in his state of the Union message, repeatedly emphasized the importance of education as a means not only of relieving poverty and all its evil effects but of preventing it.*

"Very often a lack of jobs and money is not the cause of poverty, but the symptom.

"The cause may lie deeper—in our failure to give our fellow citizens a fair chance to develop their own capacities—in a lack of education and training, in a lack of medical care and housing, in a lack of decent communities in which to live and bring up their children.

"But whatever the cause, our joint Federal-local effort must pursue poverty, pursue it wherever it exists, in city slums and small towns, in sharecropper shacks or in migrant worker camps, on Indian reservations, among whites as well as Negroes, among the young as well as the aged, in the boom towns and in the depressed areas."


U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • ANTHONY J. CELEBREZZE, *Secretary*

OFFICE OF EDUCATION . . . FRANCIS KEPPEL, *Commissioner*

L. V. GOODMAN, *Acting Director, Office of Information*

SCHOOL LIFE

January–February 1964

Vol. 46 . . . No. 4

THEODORA E. CARLSON
*Editor*

ADA JANE KELLY
*Associate Editor*

CATHERINE P. WILLIAMS
*Assistant Editor*

*School Life* reports Office planning and action and publishes articles by members of Office staff; presents statistical information of national interest; reports legislation and Federal activities and programs affecting education. Published nine times a year.

Printing approved. Bureau of the Budget, August 23, 1961. Contents not copyrighted. Subscription: Domestic, $1.75 a year; foreign, $2.25; 1-, 2-, and 3-year subscriptions available. Single copies, 20 cents. Send check or money order (no stamps) to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.



ADVISORY COMMITTEE

HERBERT S. CONRAD
*Research and Development*

R. ORIN CORNETT
*Higher Education*

VAUGHN R. DELONG
*International Education*

GERALD W. ELBERS
*Assistance Programs*

JOHN H. LLOYD
*Office of Information*

# Notes on the Notable

## FEDERAL PROGRAMS AND ACTIVITIES

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

### ETV grants go to six States

Five Federal grants totaling $693,342, approved by the Department of Health, Education, and Welfare in December, will help establish and expand educational television stations in 6 States. Since the Congress made $32 million available under the Educational Television Facilities Act of 1962, the Department has approved 10 grants totaling $1,552,294, all on a matching fund basis.

The five new grants were made to the following agencies:

The Duluth-Superior Area Educational Television Corporation, Duluth, Minn., $212,625, to activate Channel 8 at Duluth-Superior; the project will cost an estimated $425,250. Channel 8 is expected to provide educational television to about 250,000 persons not now served.

Delta College District, Bay City, Mich., $183,920, to activate Channel 19 at Bay City; the estimated cost is $305,864. The new service will be available to approximately 507,000 persons and 158 schools with enrollments of 135,000 students.

The Regents of the University of Georgia, $136,109, to expand facilities of Channel 8 at Atlanta; estimated cost of the project, $181,479. The university, which is the major production center of the State ETV network, hopes to reach approximately 60 percent of the State population with the expanded facilities.

The School District of Kansas City, Mo., $102,000, to expand facilities of Channel 19 at Kansas City; estimated cost of the project, $136,000. The expanded service will have an estimated audience of 175,000 persons.

School District No. 1, Denver, Colo., $58,688, to expand facilities of Channel 6 at Denver; estimated cost of the project, $78,251. With the aid of the new funds, the district expects to increase service by 30 percent within 90 days.

### Guidelines for field services in teacher education appraised

A 3-day conference held in the Office of Education last month studied a set of guidelines on credit and noncredit activities of field service departments developed by the Association for Field Services in Teacher Education. The Association, which had developed the guidelines over a period of several years, requested the conference so that the guidelines could be appraised by others concerned with extension work. Wholesome professional criticism would, the Association believed, help to broaden the application of the standards.

The 30 persons who attended the conference represented associations, education, and government at all levels. They represented, for instance, the Association of University and Evening Colleges and the National University Extension Association; Trenton State College, the University of Michigan, and other institutions; the Barren County (Ky.) school system, the Georgia and Virgina State departments of education; the Baltimore and Wilmington public school systems; and the Office of Education.

One byproduct of the conference is that those attending developed a sharper understanding of the nature and complexities of extended services as developed by teachers colleges and universities. The conference could lead to closer work among associations and institutions engaged in extended services for teachers.

The Standards Committee of the AFSTE will meet in Chicago on February 22–23 to revise its guidelines in line with the recommendations of the conference.

### Institutes for modern foreign language teachers

About 4,200 elementary and secondary school modern foreign language teachers will receive intensive training this summer and during academic year 1964–65 under the language development program of the National Defense Education Act. About 3,600 teachers of French, Spanish, Italian, German, Russian, and Chinese will attend 71 summer institutes at institutions of higher education in the United States. About 600 other teachers of French, Spanish, German, Russian, and Chinese will attend summer institutes in France, Germany, U.S.S.R., Taiwan, Mexico, Ecuador, and Argentina. The institute in Taiwan will be the first overseas program in Chinese and will be conducted by the San Francisco State College. There will be three academic year institutes in the United States for about 70 participants.

### Talent development conferences

In cooperation with the State departments of education of Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington, the Office of Education's Talent Development Project and the Region IX Office of the U.S. Department of Health, Education, and Welfare are planning to hold two conferences on talent development on the West Coast this spring. The first will be held in Los Angeles on April 14–15; the second in Portland on April 17–18. The Office will invite some 400 carefully selected persons from elementary, secondary, and higher education and from the community to each conference. The conferences have been designed to disseminate information about, to stimulate thought on, and to promote considered action in behalf of talent development.

General addresses at the conferences will explore the topics of so-

ciety's responsibility for identifying and nurturing talent, the talented person's freedom to choose alternative courses of action in an open society, and climates appropriate to talent development in schools and colleges. Concurrent group discussions during the conferences will focus on such specific topics as mathematics for talented elementary school pupils, educational provisions for artistically gifted children and young people, research relevant to curriculum planning for gifted students, the identification and nurture of talent in members of culturally different minorities, and independent study and honors programs in college.

### Cultural exchange program

A team of three U.S. educators has completed a 3-week visit to the Soviet Union during which members studied educational administration at all levels. Their visit was arranged under the 1962–63 cultural exchange agreement between the two nations. Team members were Herbert Rudman, professor of education, and William Roe, head of the Administration Area of the College of Education, University of Michigan, and Fred F. Beach, director of the Administration Branch, Division of Elementary and Secondary Schools, Office of Education.

Since 1958 there have been three agreements between the United States and the U.S.S.R. for scientific, technical, educational, and cultural exchange. A group of U.S. Government officials is now in Moscow negotiating a cultural exchange agreement for 1964–65. The United States is striving for an expanded program. Fredrika M. Tandler, director of the Division of International Studies and Services of the Office of Education, is a member of the team.

The Office of Education has arranged for seven exchanges of educators. The first U.S. team, which laid the groundwork for further visits, was headed by Lawrence G. Derthick, then U.S. Commissioner of Education. Other teams have studied such aspects of Soviet education as teaching methods, science in the curriculum, educational research, the teaching of foreign languages, education in the arts, and adult education.

### Thirteenth volume of Presidential papers

Harry S. Truman's public papers as President of the United States in 1947—the year of the Truman Doctrine and the Marshall Plan—have been brought together and issued as the 13th volume in the series "The Public Papers of the Presidents of the United States." The new volume contains 234 items—messages to Congress, the state of the Union message, special messages on the termination of emergency and wartime powers, joint statements with leaders of other governments, letters on the unification of the armed services, items on the food conservation program, and statements on the peace treaties with Italy, Hungary, Rumania, and Bulgaria.

The series now contains volumes on the 8 years of President Eisenhower's Administration, the first 2 years of Mr. Kennedy's, and the first 3 years of Mr. Truman's. They are compiled by the Office of the Federal Register, National Archives and Records Services, General Services Administration.

The new volume contains 613 pages. It is, like all other volumes in the series, available from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. The price is $5.25. The prices of other volumes vary.

### NSF program for high-ability secondary school students

Colleges, universities, and research organizations, with the support of the National Science Foundation, will offer training programs in science and mathematics this summer to about 7,500 high-ability secondary school students. NSF believes that its summer programs for secondary school students stimulate scholarly development in the participants and encourage the sponsoring of similar programs by other agencies.

Students chosen for participation will receive instruction in a science or become a junior member of a research team. Some programs combine instruction and research. In all cases the offerings avoid duplicating instruction available in the participants' regular school work.

The sponsoring institution, not NSF, will determine admissions. Selection will be based on scholastic ability, aptitude for science, and the completion of certain science and mathematics courses. Programs range from 5 to 13 weeks. NSF pays for the instruction program, but the student must meet his own room and board and travel expenses.

Copies of a booklet announcing the program have been sent to secondary school principals, science teachers, and counselors. Names of sponsoring institutions are included in the announcement. Extra copies are available from the National Science Foundation, Special Projects in Science Education Section, Washington, D.C., 20550.

### AID programs in Africa

THE AGENCY for International Development has made a loan of $800,000 to Tanganyika to help the University College at Dar es Salaam to build classrooms, a library, and a refectory-student union.

In addition to the AID loan, the university is receiving support from the United Kingdom, the Ford Foundation, its own government, and local benefactors.

AID is helping Liberia to build a new junior-senior high school in Monrovia to assist the country in reaching its goal of from 5,000 to 6,000 high school students by 1972. AID's loan will enable Liberia to build and equip a 10-building secondary school facility for 1,200 students.

# Can Your School Afford the New Science Programs?

WILLIAM J. GRUVER

THE MOST arresting development in the teaching of science in secondary schools is the increased emphasis on subject matter. The science content improvement courses offered by the Biological Science Committee Study (BSCS), the Chemical Bond Approach (CBA), the Chemical Materials Study (CHEMS), and the Physical Science Study Committee (PSSC) * are a major contribution to this development. These courses, developed by national teams of scientists, high school teachers, and college professors, are the first of their kind to close the gap between the scientist, the teacher, and student.

Although more than 150,000 students are already following these courses, those in the vast majority of our schools are still following the more conventional science programs. Many school officials are now asking themselves "Shall we teach the new materials?" Before they can proceed they must also answer the question, "Can we afford them?" They know that the cost factor is too often the overriding consideration which determines the school's program. There is seldom enough money to go around. The problem of stretching budget money is currently compounded by mounting professional and community pressures to improve services and to extend services—in the face of a school population growing exponentially.

The new science courses with their emphasis on updated laboratory experiences seem to imply additional expenditures. Do they in fact? It is true that the trend in scientific laboratories is toward automation and instrumentation. Does the school need expensive instruments such as telethermometers, spectrophotometers, spectrographs, or high vacuum "stuff" for BSCS, PSSC, CBA, or CHEMS? Does it need additional laboratory space? In terms of hardware, how different are the requirements of the new courses when compared to an acceptable conventional science program?

"Keeping the cost down" was one of the guides used by the teams responsible for the new courses as they decided what to include. The courses they have developed are, therefore, scaled to what most schools are very likely able to afford.

But can *your* school afford them?

I have written this article to give those pondering this question some guides on which to base an answer.

## Factors To Be Considered

In estimating what conversion to new science courses will cost, a school must consider such factors as *facilities, supplies, printed material* and *films,* and *equipment.*

*Facilities.*—The school science area that has space (50 sq. ft. per student, for instance), ample work surface, and the standard utilities can accommodate any science course without limiting the kind of experimentation the student and teacher will want to do. It is true the new courses require space—lots of it. A class in BSCS, for example, needs enough space to incubate over 100 eggs at the same time. Where there is much student activity—projects and experiments in various stages of development—the best use of space is a challenge. No matter what the course, students should be using the laboratory facilities to the maximum or they are not receiving the full benefit of learning what science really is.

*Mr. Gruver is a science specialist with the Instructional Resources Branch, Division of State Grants, Office of Education. He has taught chemistry in public and private schools. He came to the Office from the Montgomery County, Md., School System, where he was science department chairman and high school administrator.*

*Supplies.*—Students in the new courses will use greater quantities of consumable supplies (chemicals, reagents, and specimens), if only for the reason that they will spend more time in the laboratory. They will use more specialized and more expensive items—items like tegosept M, chlorotone, aureomycin discs, and dimethylparaphenylenediamine; and they are more likely to use ampules and preweighed packages of chemicals for preparing solutions of exact molarity and normality.

But the greater cost of consumption is offset by the fact that the new courses require fewer items. On lists of required items compiled by the Montgomery County, Md., school system and the New York State Department of Education for conventional chemistry instruction, I counted about 300 items each. The CHEMS course, on the other hand lists 100, only 30 of which could be categorized as unconventional. By using $3 a chemical as the average cost, a figure used by commercial suppliers, an outlay of approximately $100 would convert a class to CHEMS. An entirely new laboratory would require approximately $900 to buy conventional chemicals and $300 to buy CHEMS supplies.

*Printed material and films.*—Each of the course content improvement groups has developed related text-

*For a full description of these courses, see the October 1962 issue of *School Life.*

books, laboratory guides, teacher guides, monographs, examinations, and, with the exception of CBA, series of films directly related to the printed material.

Hardback textbooks for the new courses can be purchased from commercial publishers at nearly the same cost as traditional high school science texts—net $5.70, plus $1.50 for the student laboratory guide.

The new course films are the most costly of the conversion items. There are, however, depending on the distributor, a number of acquisition options—rental, subscription, lease-to-buy, and, of course, outright purchase.

- *PSSC films.*—All 53 PSSC films can be bought for $8,000. The average school uses about one half of the total. A single print costs about $150 (list price). Films can be rented.

- *CHEMS films.*—The average cost of CHEM's 25 films is $140 each, $500 for a set of five, and $3,840 (less 15 percent) for all of them. Perhaps 10 selected films would be adequate to install the CHEMS film program.

- *BSCS films.*—BSCS's Biological Technique Series of 10 films costs $750.

*Equipment.*—As a rule, a well-stocked high school laboratory has equipment on hand to begin a class or two using the new programs. There are some special equipment needs, however, and these have been pretty well identified. They are, by course—

*Biology.*—Some items useful in BSCS and not always found in high school biology laboratories are autoclaves, incubators, blenders, kymographs, transfer chambers, kitchen ranges, refrigerators, centrifuges, dishwashers, and mechanical garbage disposal units. Acquiring additional microscopes and balances of better quality than those that are usually found in a conventional laboratory is often the top priority action. One BSCS pilot school, to give an example, with a good conventional program spent $3,000 on additional equipment—$2,000 of this amount went for stereomicroscopes, which it says are a *must.*

*Chemistry.*—CBA and CHEMS require a triple-beam balance sensitive to the centigrams for every two students in the section. Since the traditional laboratory is likely to have three to five of these balances on hand, the extra balances will cost a minimum of $250.

CBA laboratory work requires the use of a centigrade thermometer with a range of −10 degrees to 50 degrees. These list for $8 each, and the number required could mean an extra expenditure of $250. However, a considerable saving can be realized by using the styrofoam spheres for building models as suggested in the CBA materials. Compare $5 for the styrofoam package and $40 to $75 for a model building kit using other than the styrofoam.

CHEMS experiments require ammeters (0–3 amp. C.C.), voltmeters (0–10 volts D.C.), separatory funnels, audiometers, drying oven, and centrifuges in quantities not usually found in the high school chemistry department. Purchase of these items could add $1,000 to the cost of conversion.

*Physics.*—Kits designed especially for the PSSC program are used in the laboratory. Some teachers with student assistance fashion their own kits, but most prefer to purchase them. Purchase of the basic kits for a class of 24 could cost $1,000. This figure does not represent an extra cost because purchase of just a few standard instruments for the conventional physics program could equal this amount.

From my studies of lists of equipment needed for the new courses and the reports of school systems which have adopted them I have developed the summary table of estimated conversion costs shown below.

There are other costs to be considered which are outside the scope of this article, such as the cost and time of preparing teachers to use the new materials. Teachers following the new courses should have lighter teaching loads and fewer nonteaching duties, since the new courses require extra laboratory preparations. There are compensations for these extra costs, however. The preparation and assignment of the teacher are difficult subjects to probe in terms of extra costs, and it is one we cannot go into in this article.

If we restrict ourselves to the cost of facilities, supplies, printed material and films, and equipment, we find that a school which moves at one fell swoop from mediocre conventional programs to a maximum level of all of the new programs for several hundred students makes a major outlay of money. With or without the new programs, a change from a level of bare subsistence to the near ultimate in facilities and equipment costs a considerable amount.

**A Summary of Estimated Conversion Costs—Two Laboratory Sections [Costs of textbooks, student guides, monographs, charts, and examinations have *not* been included]**

| *Item* | *PSSC* | *CBA* | *CHEMS* | *BSCS* |
|---|---|---|---|---|
| Consumable supplies | ..... | $100 | $100 | $400 |
| Basic student equipment | $1,000 | 500 | 1,000 | 1,500 |
| Glassware | ..... | 200 | 200 | 700 |
| | 1,000 | 800 | 1,300 | 2,600 |
| Films | 3,000 | ..... | 1,000 | 750 |
| Total* | 4,000 | 800 | 2,300 | 3,350 |
| Number of films | 20 | ..... | 10 | 10 |

*Current catalog price of items not generally found in the average high school laboratory.

No doubt the new programs have acted as catalytic agents in extracting budget silver to produce the science workshops needed for students of the 1960's.

## Example of Costs

The cost of converting programs with new course content can best be illustrated, perhaps, by several examples from schools with good equipment that have adopted the new courses. As was expected, costs of converting traditional laboratories to those recommended by the studies varied from school to school depending on the amount of adaptable conventional equipment already in the school. According to the narrative reports from the States for fiscal year 1963 under title III, National Defense Action Act, most States estimate that of the secondary school science laboratories now in use, about one-half are inadequate.

Grossmont Union High School District, Grossmont, Calif., took stock of its situation and issued a *Report on a Major Problem for Schools Anticipating Adoption of BSCS and CHEMS Curricula.* This report shows that the cost per student for *glassware* required by CHEMS and not presently available was $10.13. A table of comparative costs of items, however, shows that the outlay for the conventional micro laboratory glassware was $17.21 and for semimicro $4.50, but that individual work station items for CHEMS cost $10.71. The capital outlay involved in converting to a CHEMS program for 5 classes of 32 pupils each was $1,670.70.

The biology tables of the report were "reviewed by other biology teachers, and the amounts of glassware listed as needed in a traditional course seem to be reasonable." They show that the total cost of glassware for the BSCS, Green Version, was $1,260.70; for a conventional course only $180.77. The BSCS figure was based on the catalog price for the recommended material listed for 160 students in Appendix 4, Part 2, of the BSCS Teachers' Guide to the Laboratory Manual.

The Kanawha County, W. Va., school system, in a report prepared by the science supervisor, estimates that the cost of *new* equipment for each of two pupils in biology and chemistry and each of four pupils in physics was as follows:

| | |
|---|---|
| BSCS (Green and Blue)—30 pupils | |
| Apparatus | $300.00 |
| Supplies | 175.00 |
| BSCS technique films | 607.20 |
| Total | 1,082.20 |
| CHEMS—20 pupils | |
| Apparatus | 300.00 |
| Supplies | 30.00 |
| 11 films | 1,100.00 |
| Total | 1,430.00 |
| PSSC—20 pupils | |
| Apparatus | 696.41 |
| Reference books | 31.50 |
| 10 films | 2,268.00 |
| Total | 2,995.91 |

These laboratories were already fairly well equipped with basic apparatus, supplies, audiovisual material, and reference books.

According to the *Chemical Education Materials Study Newsletter* for May 1963, 389 teachers, when asked approximately how much it cost them to convert their work to CHEMS study, exclusive of books and motion pictures, replied as follows:

| *Average cost* | *Number of teachers* |
|---|---|
| $100 or less | 99 |
| $101 to $300 | 87 |
| $301 to $500 | 73 |
| $501 to $1,000 | 40 |
| Over $1,000 | 17 |
| No estimate | 73 |

This means that the cost of the average changeover was about $350 for equipment and supplies, for a one-class section of 20 to 30 pupils.

## How It Can Be Done

A major changeover of a laboratory can mean a considerable outlay of money, of course. But there are ways of cutting expenses. The school can shop around for bargains. It can find second-hand equipment in good condition, particularly refrigerators and ranges used in the school cafeteria. Surplus equipment and materials can be obtained from Government agencies, colleges and universities, local industry, research centers, and hospitals. Schools can share films. Science club members can assemble instruments from low cost kits. The school shop can help build some equipment. Acquiring some equipment at a saving is a possibility limited only by the resourcefulness of the science department.

One of the best sources of help in converting to a new program is title III of the National Defense Education Act. Title III authorizes Federal grants for purchasing equipment and remodeling facilities for science instruction. In the 5 years since NDEA went into effect, State education agencies have approved more than 180,000 projects for local public schools for purchasing materials and equipment and for minor remodeling of facilities. The title III program permits—indeed encourages—schools to try new course materials.

Your school can afford the new programs as well as it can afford any meritorious program which is geared to prepare today's students for the challenge of tomorrow's science.

**For additional information . . . . . .**

**Mr. Gruver is the author, with Dr. Albert Piltz, specialist for science, Office of Education, of two Office publications which contain additional information on the subject of this article. One is on the selection, use, and evaluation of science kits: Science Equipment and Materials: Science Kits (OE–29049). The other contains descriptions of typical science programs: Modern Science and Your Child (OE–29048). Both can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. The price of the first is 15 cents; of the second, 25 cents.**

# DOORS WERE OPENED

## A Commentary on the 1963 Dropout Campaign

HYRUM M. SMITH AND LEONARD M. MILLER

*The authors of this article have drawn on reports recently received by U.S. Commissioner of Education Keppel from the cities which last August received allocations from President Kennedy's Emergency Fund for campaigns to keep dropouts and potential dropouts in school. The President had contributed $250,000; most of the money was allotted to the 25 largest cities in the country; and the rest was given on a first-come-first-served basis to school districts ready and willing to make immediate use of it.*

*The idea of having these campaigns grew out of three meetings held in Washington last summer to consider what should be done to see that every person has an opportunity to get a good education and takes advantage of it. On June 19, at President Kennedy's invitation, 250 educational officials from all over the country—heads of local school boards, presidents of colleges, college trustees, city superintendents, State commissioners of education, and heads of educational organizations—met at the White House; on July 5 several city superintendents met with Commissioner Keppel; and on July 13 a large group of city superintendents, together with the chairmen of their school boards and their local welfare officials, met with Commissioner Keppel and U.S. Commissioner of Welfare Winston.*

WHEN SCHOOL DOORS swung open last September, students returned to their classrooms in unprecedented numbers. Many of them were students who had been thinking of dropping out but who had changed their minds. Others were students who had left a year or more ago but had decided to return for another effort.

*Mr. Smith is chief, Guidance Procedures and Techniques Section, and Mr. Miller is specialist in guidance techniques, U.S. Office of Education.*

Their decision to return resulted directly from the dropout campaign conducted last summer at the urging of President Kennedy and with the help of $250,000 from his Emergency Fund. Sixty-three communities in 23 States and the District of Columbia participated in the campaign using funds he made available. Many persons in these communities worked to make the campaign a success, but it was the school counselors—1,375 in all—who provided the guidance services. Judging by the number of students influenced, the school-community campaign brought results:

> 59,300 actual and potential dropouts were contacted; 30,361, or 51 percent, of this number returned to school in September; 28,078, or 92 percent of those who returned were still enrolled as of November 1.

But the benefits of this brief period of concerted activity go far beyond the return of students to school. The public reacted enthusiastically and began to recognize the dimensions of the dropout problem more clearly than ever before: such recognition is a necessary preliminary to action. Equally important, the schools took a sharp look at themselves and considered anew the need for important changes.

Here are some of the things school systems have turned their attention to in helping the students who returned:

1. Improved personal counseling to help students realize their goals, select appropriate courses of study, and find ways of overcoming their problems
2. Special classes, after-school study programs, tutorial help, and other means of giving students the individual attention they need to do better scholastic work
3. Release of certain students from fixed school regulations to allow them to take the courses they want and need, or to study part time so that they might take only the few courses they want and need to graduate, or to take a part-time job. In one school a student gave full time to remedial reading and another took only two mathematics courses
4. Improved cocurricular offerings to make the school more interesting and attractive
5. Greater involvement of the school with the community, including welfare and other public agencies, to meet students' social and economic needs that have a bearing on their attendance and success in school.

Schools which had not had regular dropout programs before the summer of 1963 used the opportunity offered by the campaign to study the various possibilities open to them for increasing the opportunities for the students who had returned. Almost without exception, reports of the campaigners deplored the fact that there was little time to be helpful to the students returning to school this fall. They urged the necessity of solving underlying problems and of adapting school programs to the needs of all students.

### Campaign plans

Not all communities or schools within a community used the same plan in their dropout campaign. Some schools got in touch with students who had dropped out a year or two ago and urged them to return to complete work for their high school diplomas. Other schools checked last year's enrollment records to find out which students were planning to drop out before the new session started.

Still others attempted by questionnaire or interview to find the reasons

students had dropped out, as a preliminary step to planning school programs to help returning dropouts, to preventing dropouts in the future, and to working with other agencies to alleviate personal and economic pressures connected with ability to attend school.

A number of schools, predominantly those with problems of widespread community apathy or school failure, inadequate facilities, or staff actively opposed to curriculum changes or to providing for the needs of all students, tried by various means to make the community more aware of the value of education.

In school districts in which the value of education is generally known and accepted and in which school officials have been investigating dropouts and potential dropouts for a number of years, other plans were followed. For example, schools in such districts experimented with tutorial and remedial programs (especially in teaching reading), flexible programing, expanded vocational opportunities, work-study programs, broadened cocurricular offerings, and improved guidance procedures.

The most impressive results were obtained from concerted, united community effort—when schools, welfare agencies, businessmen, parents, employment agencies, churches, community groups, and news media planned together for complementary activities. Face-to-face conversation with dropouts and their parents achieved the best response.

### Why students returned

Students returned to school for several reasons, but one of the major reasons was the personal interest shown them by school staff members. The students themselves frequently acknowledged this fact in such comments as "I didn't know anybody cared about me." And once the students accepted the interest as genuine, that the attention paid them was directed at their own needs, they forgot their resentment over past experiences and voluntarily attended study-help sessions conducted during the summer and in after school hours. Such sessions were responsible for rebuilding the confidence of thousands of students in their ability to complete academic programs.

A second reason for students returning to school was their experience as dropouts. Students who had left school to work but had been unable to find jobs returned because they "were tired of sitting around." Most of the dropouts who had found work held low-level jobs which not only brought in an unsatisfactory income but held no promise for the future. When they found, as they said, "You can't get anywhere without a high school diploma," they returned to school to raise their level of education, to improve their job skills, and to get their diplomas.

A third reason for students' returning to school was the pressure exerted by their parents. It is very likely that at least some parents who steered their children back to the classroom had been influenced by the campaign.

Some students had left school because of forces outside their control—poor health, for instance, and the fact that they were needed to help support their families or to take care of younger brothers and sisters. During the campaign many of these conditions were improved with the help of welfare agencies. The students were then free to return to school part time or full time.

Evening school, special schools, classes for youg adults, and programing to meet individual needs prepared many who had been considered to be "hard core" dropouts to return to school.

A few schools and communities reacted negatively to the campaign—with attitudes ranging from apathy to antipathy. Some students and their parents, feeling that the schools had failed them, asked what use there could be in another chance. A few students were outraged that the schools from which they had escaped were still trying to tell them what to do. Some parents believed, they said, that the schools were infringing upon the privacy of their homes. And even some teachers and administrators believed that students should do all the adapting that had to be done. A few teachers and other school staff members openly resented the fact that boys and girls whom they considered as undesirable elements and who, they believed, would be disrupting influences were being urged to return to classes. However, such staff members were very much in the minority.

In the majority of the communities in which dropout campaigns were waged last summer, there was "vast, eager, spontaneous participation," to use the words of one school superintendent. Even participants who at first were only lukewarm to the campaign idea had a change of heart and expressed strong hopes for the future as a result of these activities.

Administrators were grateful for the unexpected funds especially earmarked for this purpose. "We couldn't have financed the project from local sources," several said. Others commented, "There is so much we would like to do for the young people that we cannot because of budgetary limitations and crowded school buildings."

Counselors appreciated this opportunity to carry out guidance activities unhampered by other school-related duties. "If we had this freedom all year, we could really do something about preventing dropouts," was a typical comment. Many persons expressed the hope that counseling services would be expanded in both the junior and senior high schools and made more easily available in elementary schools. This expansion would serve the purpose not only of helping all students make wise personal-interpersonal, academic, and vocational decisions but also of identifying potential dropouts early, when remedial action is most beneficial. As one counselor put it, "How much more effective it would be to be able to counsel the student before he drops out."

Most reports emphasized the community relations value of the summer campaign. "The sense of unity achieved as the community joined with the schools to help the youth . . . was profoundly impressive and no less beneficial to the adult participants than to the youth who were helped," the superintendent of schools in one of the Nation's largest cities said.

### The community approach

Here is an example from many similar reports showing the value of wide community effort in salvaging individual dropouts.

A boy just beyond the age of compulsory attendance left school because he had to help support his mother and several half-brothers and half-sisters. His youth and lack of experience and education made it impossible for him to find a job to meet his needs. He wanted to return to school, but could not because of his heavy responsibilities and his lack of money even for essentials such as food, clothing, and bus fare. Moreover, he did not find in the district in which he should have enrolled a course of study that would help him reach the vocational goals he had at the time.

After consultation with the boy, a school counselor in cooperation with an excellent all-community dropout committee considered his problems and met them one at a time. In a neighboring school they found a suitable program offering the shop courses he wanted as well as the English and mathematics courses he needed, and in his own home town they found a job for evenings and weekends which made it possible for him to contribute to the support of his family. Funds made available by a local businessman provided a small loan to take care of his immediate financial needs for lunch and bus fare until he received his first paycheck, and the Mutual Help Agency supplied him with the clothing he needed. The school counselor provided him with school books.

Hundreds of similar cases solved with community ingenuity in the 1963 summer dropout campaign proved beyond a doubt that people really want to help.

"Doors were opened," one guidance supervisor said, "and our concern now is to provide a school program which will keep in school those who did return."

## 1964–65 NDEA Counseling and Guidance Institutes

In 1964–65 the Office of Education will support 64 counseling and guidance training institutes at a cost of $7.25 million through title V–B of the National Defense Education Act. There will be 25 regular session institutes (full academic year) for 750 participants and 39 short-term institutes (summer only) for 1,200 counselors, conducted by colleges and universities under contract with the Office. The purpose of the institute program is to improve the qualifications of secondary school counselors or teachers preparing to become counselors.

Application to attend an institute must be made to the sponsoring institution, not to the Office of Education. The names of the institutions are:

### Academic year 1964–65

ALABAMA: University of Alabama.

CALIFORNIA: University of Southern California.

FLORIDA: University of Florida.

GEORGIA: Atlanta University; University of Georgia.

ILLINOIS: University of Illinois.

INDIANA: Indiana University.

KENTUCKY: University of Kentucky.

MASSACHUSETTS: Boston University.

MICHIGAN: Michigan State University; The University of Michigan.

NEW JERSEY: Rutgers, The State University.

NEW YORK: New York University; State University of New York at Buffalo; Syracuse University.

NORTH DAKOTA: University of North Dakota.

OHIO: The Ohio State University; University of Toledo.

OKLAHOMA: Oklahoma State University of Agriculture and Applied Science.

OREGON: Oregon State System of Higher Education.

PENNSYLVANIA: The Pennsylvania State University.

PUERTO RICO: University of Puerto Rico.

TENNESSEE: University of Tennessee.

TEXAS: University of Texas.

WYOMING: University of Wyoming.

### Summer institutes

ALABAMA: University of Alabama.

ARIZONA: University of Arizona.

CALIFORNIA: Fresno State College; Long Beach State College; Sacramento State College; San Diego State College.

COLORADO: Colorado State University.

GEORGIA: University of Georgia.

IDAHO: Idaho State University.

ILLINOIS: Loyola University.

INDIANA: Purdue University.

KANSAS: Kansas State College of Pittsburg.

KENTUCKY: University of Kentucky.

MAINE: University of Maine.

MARYLAND: University of Maryland.

MASSACHUSETTS: Boston University.

MINNESOTA: University of Minnesota, Duluth; University of Minnesota, Minneapolis.

MISSOURI: University of Missouri.

NEW JERSEY: Rutgers, The State University.

NEW YORK: State University of New York at Buffalo; Syracuse University; Hunter College.

NORTH DAKOTA: University of North

*Continued on page 13*

# TEACHER PREPARATION

## *Five targets for the next 10 years*

JOHN B. WHITELAW

FIVE TARGET objectives which have emerged from the variety of fifth-year programs of teacher education since World War II may now serve to focus our endeavors nationwide to improve the preparation of elementary and secondary school teachers.

My purpose in this brief article is to present what appear to be significant outcomes of fifth-year teacher education as five practical goals toward improving the quality of teacher preparation during the next 10 years.

It seems to me that if we, who have major responsibilities for teacher education, can focus our united efforts upon these target objectives, there is a good chance that we can measure up to the demands upon us for mature and inspiring programs of teacher preparation.

After discussing five outcomes of recent pilot programs in fifth-year classroom teacher education, I wish to translate these results into proposed targets for teacher preparation in the years just ahead.

The key to progress would appear to be: to simplify objectives, clarify means, and all pull together.

*Dr. Whitelaw is specialist for advanced study in teacher education, U.S. Office of Education. During the past 30 years he has directed teacher education in colleges and universities and organized training programs in several departments of the Federal Government. He is the author of The School and Its Community, an introduction to the dynamics of school-community cooperation. Dr. Whitelaw's article includes the substance of his presentation to the meeting of the Division of Teacher Education, Association of State Universities and Land-Grant Colleges, Chicago, November 12, 1963.*

### The catalytic effect of fifth-year programs

During the 17 years since 1946, vigorously developing fifth-year programs have been the growing edge of teacher education in the United States. Though these programs have been essentially expedient in purpose and content, they have represented a natural exploration forward in the evolution of teacher education from normal school to teachers college to general-purpose college to multi-purpose university.

The leverage of fifth-year *preservice* programs toward improving the quality of teacher preparation has beer all out of proportion to their number and size. The net effect, however, is not out of proportion to the interest they have generated among teacher educators.

In a recent study for the Office of Education, Dr. Henry Harap surveyed 1,976 fifth-year programs of classroom teacher education which were offered by 462 colleges and universities in the United States during 1959–60. He analyzed 183 fifth-year *preservice* programs "conducted exclusively for college graduates who previously had not been enrolled in a program of teacher education." These 183 preservice programs were offered by 129 institutions in 32 states and the District of Columbia.

From an examination of Dr. Harap's study, in which he received a response of 98 percent to his questionnaires, and from my own recent discussions with educators throughout the United States, it is my estimate that there have been five germinal outcomes from fifth-year teacher education which have particular significance for a united effort by the profession in the years just ahead.

1. *Five years required for teacher preparation.*

It is becoming generally recognized that 5 years is necessary for the basic training of a professional teacher, both for the elementary and for the secondary schools. This fact, as many of us have realized for some time, is pointed up by an educational paradox: a person who is not going to be a teacher has a better general education when he receives his bachelor's degree than a person who is about to become a teacher. This is patently ridiculous. There is virtually unanimous opinion among teacher educators today that a total of 5 years of higher education is required for the basic preparation of a teacher.

2. *The proven value of the internship.*

The outstanding contribution of fifth-year *preservice* teacher education has been the extraordinary success of the internship not only as a training device but also as a mechanism for achieving functional partnership in teacher education between teacher training institutions and public school systems. Besides, the internship can be self-supporting!

3. *Integration of the professional segment into the internship.*

There is wide recognition today of the meaning of what many of us have been saying for years—that the professional element in a teacher's preparation should be clinical in nature and must be programed as a clinical type of experience for the teacher-in-training. Theory is virtually meaningless in teacher education unless it is intimately related to practice, unless it is integrated with practical experience. This can best be done, as has been demonstrated in numerous suc-

cessful fifth-year programs, by integrating what we often refer to as "the professional sequence" into the internship.

4. *Appropriate status and pay for the supervising teacher.*

The key to an effective internship is a talented supervising classroom teacher. It is generally recognized that this is a role for master teachers who should be accorded professional status and pay commensurate with their vital contribution to sound teacher education.

5. *No compromise with subject matter competence.*

The preservice fifth year was originally designed before World War II to insure the subject matter competence of secondary school teachers. In many recent fifth-year programs it has been necessary to by-pass the subject matter objective in the fifth year itself since so many fifth-year students have had no professional preparation for teaching in their undergraduate programs. As Dr. Harap reports, 80 percent of the courses in the fifth-year *preservice* programs he analyzed were professional: for elementary school teachers, 88 percent; for secondary school teachers, 69 percent. However, there has been no lessening of the emphasis upon subject matter competence in a student's total 5 years of preparation for teaching: a solid 4-year liberal arts curriculum plus a fifth year given in large measure to meeting the local requirements for certification.

To recapitulate: Five outcomes of fifth-year programs which are of special value in plotting goals for teacher preparation are:

1. Five years for basic teacher education;
2. The internship;
3. Professional courses integrated into the internship;
4. Recognition in status and pay for supervising teachers;
5. Emphasis upon subject matter competence.

So much for contributions to our theory and practice which may be attributed to fifth-year teacher education, especially to preservice fifth-year programs.

How may we apply them?

## Five targets for teacher preparation

1. *Four years plus an accumulated fifth year as the basis for full certification of elementary and secondary school teachers.*

With a growing acceptance of the desirability of 5 years of higher education as the basis for full certification, it is clearly evident to me from correspondence and from personal conversations across the country that 5 years is conceived of as FOUR PLUS ONE: 4 years of higher education for *provisional* certification for a beginning teacher plus a fifth year, to be completed within a stipulated period, for *full* certification.

Eleven States now require 4 years of higher education for a beginning secondary school teacher, plus an accumulated fifth year for top certification. I include Pennsylvania among these 11, even though Pennsylvania requires only 24 semester hours of approved college work beyond a bachelor's degree for full certification.

Eleven States, in which I also include Pennsylvania, now or soon will require a bachelor's degree for beginning elementary school teachers, plus an accumulated fifth year for top certification.

California requires 5 years of approved higher education for beginning secondary school teachers. The District of Columbia requires a master's degree for beginning senior high school teachers.

I hazard the prediction that at least 35 States will require four-plus-an-accumulated-fifth-year for full certification both for elementary and for secondary school teachers by 1970.

2. *A valid internship in the fourth undergraduate year.*

As a result of the dramatic success of the paid internship for a quarter, a semester, or a year in fifth-year programs, it is proposed that we apply this effective technique of apprenticeship in the first or second semester of the student's senior year of college work. The paid internship would replace current programs of practice teaching.

As I see it, the paid internship has two particular virtues. It makes possible for the student a truly clinical experience at a level of higher professional responsibility than do most programs of student or practice teaching. It achieves a professionally strong fiscal and contractual relationship between the teacher training institution and a cooperating public school system.

Moving from *student teaching* to *the internship* is, I believe, the next logical and practical step in carrying forward the good work that has been done to date to establish meaningful and maturing laboratory experiences for teachers in training.

The most significant total contribution of the internship to improved teacher education is in providing the means for institutions of higher education and public school systems to bring about the quality of full partnership in the teacher education enterprise which is now recognized to be essential if the job is to be well done.

We now have adequate demonstrations that the internship can be self-supporting. Subsidies by philanthropic foundations are no longer required.

This proposal is a target objective. There are, of course, many details which must be worked out in each State, school system, and teacher education institution before this proposal can be put into effect.

3. *Integrating undergraduate professional content into the internship experience.*

The most effective internship programs in fifth-year teacher education have been those in which essential professional course work has been fed into the student's experience along with or as part of his teaching.

As I see it, this is carrying to the next step the block program approach to professional content which many

institutions have made part of their total programs of student teaching.

I suggest that essential professional study at the undergraduate level be limited to work in the curriculum, in methods of teaching the student's field of specialization, and in observation and participation in preparation for the internship.

It is assumed, and certainly recommended, that each student would have had as part of his basic undergraduate program comprehensive courses in general psychology, general sociology, introduction to philosophy, and the cultural history of the United States.

4. *Professional status and extra pay for the master teachers who supervise interns.*

As most of us fully appreciate, we have great talent in our school classrooms. We have not been very effective to date in motivating this talent to fulfill its indispensable role of inspiring and guiding teachers-in-training. However, the quality of the supervision of interns in fifth-year programs has, on the whole, been extremely good.

We are likely to achieve this same quality of professional leadership more widely as we give appropriate extra pay and some recognition in professional status to these invaluable supervisors of interns.

Special recognition of the worth of the supervisors of interns can, of course, be a natural means for rewarding master teachers.

The master classroom teacher is the key to a vital and soundly administered internship program.

5. *Placing the basic responsibility upon subject matter departments for the subject matter competence of each teacher-in-training.*

It is an ancient and honorable principle of sound management that responsibility is accepted only by those to whom it is clearly delegated. And with responsibility must go commensurate authority.

If the preparation of teachers is to be in fact a function of each department in which teachers-in-training receive their basic and professional education in a college or university, responsibility with commensurate authority must be delegated to subject matter departments for the subject matter competence of those students who are planning to become teachers. Such responsibility would include training students in the methods of teaching their subjects of specialization.

There are obviously more aspects of these five target objectives than can be discussed in this brief article. I look forward to more detailed discussions in the future.

These targets are proposed as the basis for united action to improve the quality of teacher education during the next 10 years.

Fifth-year *preservice* programs will continue to be a valuable method of preparing college graduates who have not had professional training to qualify for certification at a fairly high level of competence. We will continue to get many very fine teachers by this route. However, the major contributions of fifth-year preservice programs have now been made, and these, I hope, will be built into a four-plus-an-accumulated-fifth-year pattern of basic teacher preparation.

## The time is now

The opportunities to improve teacher education in America have never been greater than they are today.

Besides programs to improve the quality of teaching which have been supported by the National Education Association, the National Science Foundation, the U.S. Office of Education, and by the Ford Foundation and other philanthropic organizations, three recent events affecting teacher education have had considerable impact upon the profession and upon the general public: (a) the publication last spring of a scathing critique of teacher education, *The Miseducation of American Teachers,* by James D. Koerner; (b) the statesmanlike evaluation published this autumn, *The Education of American Teachers,* by James B. Conant, which should do for teacher education what the Flexner Report did for medical education; and (c) current discussion of the future status and role of the National Council for Accreditation of Teacher Education.

Educators of all types and at all levels are giving serious attention to the nature of basic professional preparation for the largest single professional segment of our population: 1,800,000 elementary and secondary school teachers.

If we can utilize the dynamic outcomes of fifth-year teacher education, we shall be building on the best that we know to date.

If we can keep the five target objectives central to our efforts to improve teacher preparation, the outlook will be most encouraging.

The major requirement now is to achieve nationwide understanding of the essentials for united action: to simplify, clarify, and all pull together.

---

**INSTITUTES—from page 10**

Dakota; North Dakota State University.

OHIO: The Ohio State University; Ohio University.

OKLAHOMA: Oklahoma State University of Agriculture and Applied Science.

PENNSYLVANIA: University of Pittsburgh.

RHODE ISLAND: University of Rhode Island.

SOUTH CAROLINA: South Carolina State College.

TENNESSEE: George Peabody College for Teachers; Tennessee Agricultural and Industrial State University; University of Tennessee.

TEXAS: North Texas State University; University of Houston; University of Texas.

VIRGINIA: Virginia State College.

WASHINGTON: Central Washington State College.

WEST VIRGINIA: Marshall University.

*Photographs: California State Department of Education.*

# The Language Laboratory
## *How Effective Is It?*

JOSEPH C. HUTCHINSON

THE NUMBER of language laboratories in the secondary schools has grown dramatically over the past 5 years—from a few dozen to well over 6,000. These installations, which are of many types and sizes, represent an outlay of approximately $30 million.

How effective has this educational innovation been? There is still some evidence, despite the tremendous improvements schools have recently made in the teaching of modern foreign languages with the aid of the language laboratory, that in some quarters the laboratory is being misused and its function misunderstood. But this is not surprising: every new teaching aid goes through a period when some users persist in grasping it as the final solution to their teaching problems and in trying to use it for purposes for which it was never intended and in ways for which it is unsuited. Every new teaching tool undergoes a probationary period in which educators experiment with it to discover its potentialities, to define the objectives it can help them to achieve, and to find the most productive methods of using it. For most schools the language laboratory is still in this early period: we have barely scratched the surface of its potentiality, and we cannot yet make a definitive evaluation of its effectiveness. All that we can do at this time is to make a tentative evaluation on the basis of our experience so far.

### What makes for effectiveness?

Like any tool or instrument, the language laboratory is most useful in the hands of a craftsman who knows how to use it skillfully. As every good teacher of a modern foreign language knows, the effective use of the language laboratory is a composite of the effectiveness of at least five elements: (1) The teacher, (2) the teaching materials, (3) the testing and grading programs, (4) the student practice sessions, and (5) the equipment. Each of these elements must meet certain criteria if the language laboratory is to produce the results expected of it.

*First, the teacher must be interested in getting the most out of the equipment and materials; and he must have some skill in the effective use of these aids in helping students develop the skills of listening and speaking with comprehension.*

A good teacher can make up for deficiencies in equipment and materials, just as an uninterested and unskilled teacher can negate whatever value students might obtain from even the finest of equipment and materials. But teachers today are caught between the pressures of a transitional period; and however skillful and dedicated they may be, in practice they lag behind the recent developments in methodological theory and instructional technology. This is why good inservice preparation of the teacher is an indispensable part of any school's plans for a language laboratory, and why most State departments of education employ, with the aid of Federal funds under title III of the National Defense Education Act, foreign language supervisors to provide consultive services to local schools, including help with inservice programs (the Modern Language Association, through its foreign language program, also provides a

free consultant service to help fill the gaps that remain in some States).

Thousands of foreign language teachers have been trained in summer institutes supported under NDEA, but thousands more have not yet received such training. Even for those teachers who have come under its influence, the gigantic effort of the institutes has not been great enough to enable them to catch up with changes in methods, materials, and equipment and at the same time improve their functional command of the language. Over 12,000 highly selected secondary school teachers, while they were attending the NDEA institutes, were given the Modern Language Association's proficiency tests for teachers and advanced students; and the results show that a majority of these teachers, at the time they took the test, did not have enough oral proficiency in the foreign language to serve as models for their pupils. This evidence has been supported by reports from teams of foreign language educators who have visited the institutes.

But the teacher's qualifications cannot be considered in isolation from the circumstances around him. Careful planning by administrators and teachers together is an essential part of the introduction of language laboratory facilities into any school program. In the planning, the specific language program should surely have as much weight as administrative and budgetary considerations. In other words, the idea behind the language laboratory—the idea of *substance*—is more important by far than the facilities themselves, which are *form* only. In its broadest sense, the language laboratory concept means regular and frequent use of recorded materials specially prepared as an integral part of a program in which audiolingual instruction forms the basis for the progressive and continuous development of all the language skills.

*Dr. Hutchinson is a specialist in foreign languages, Division of State Grants, Office of Education.*

Close cooperation and understanding between administrative and teaching staffs are essential not only in the planning for language laboratories but also in the use of them. Administrative decisions can easily mean the difference between an effective and an ineffective program, especially when such decisions preempt pedagogical decisions and ignore the specific needs of teachers and students. Therefore, the readiness of the school and the teachers is a prime factor in the successful use of any kind of language laboratory facilities.

*Second, the teaching materials must be designed not only to develop the listening and speaking skills efficiently but also to integrate class and laboratory work.*

Until recently, foreign language materials specifically designed for use in both class and laboratory in the secondary schools were not widely available. Materials for level I (usually the first year) began to appear on the market in 1961 and for level II in 1962. Materials for level III are just now appearing, and those for level IV are still being developed. This major problem—the problem of preparing good materials fast enough to meet the changing demands—is aggravated by the additional time it takes, sometimes years, for many school systems to adopt the new materials.

To use the new materials, experience has already shown us, the teacher needs new skills and new insight. Many teachers learn during a summer institute how to teach the first semester or the first year of an elementary course, but for lack of complete understanding and further experience they are unable to extend these techniques into higher levels. Some teachers have not yet learned what to do beyond taking the students through the first steps of imitation and memorization of dialogue material; a larger number do not yet know how to make the transition to effective structural drills; and a still larger number do not know how to make the transition to the creative use of the spoken language, that is, to have students recombine in new situations the dialogue and drill material they have already mastered. Very few teachers, we realize, give their students enough practice in listening before they plunge them into imitation of models.

Some foreign language teachers who are teaching their native language believe that the laboratory is useful only for teachers who are not fluent; consequently some fine teachers have resisted using a language laboratory. They seem to forget that the laboratory is primarily for the student, not for the teacher. The student needs it to intensify and individualize his practice of the spoken language as it has been modeled for him by a variety of native speakers—experience which a single teacher, no matter how proficient, can give him. By letting other voices take over the presentation of practice material, the teacher actually gains time for individualized teaching. The tape recorder can be an *aide* as well as an *aid*. One experienced teacher recently wrote that she could not get along without her language laboratory any more than she could without her blackboard.

*Third, the testing and grading program must give due weight to achievement in listening and speaking.*

A grave problem, which until now has hampered research on the effectiveness of the language laboratory, has been the lack of adequate instruments for measuring the listening and speaking skills. But this lack is now being corrected by the development of the Modern Language Association's Cooperative Classroom Achievement Tests. Early in 1964, for the first time in history, a set of standardized foreign-language achievement tests, which include tests for measuring the listening and speaking skills, will be

available to the secondary schools; they will be available from the Educational Testing Service. The use of these tests should help solve many of the problems that result from use of traditional tests, which place at a disadvantage those students who have learned a language primarily through listening and speaking.

*Fourth, the practice sessions must be frequent enough and long enough to enable students to develop the skills of listening and speaking.*

The successful language laboratory program provides the student with the practice sessions he needs for developing his skills. Schools are gradually realizing the importance of regular and frequent practice and are adjusting their programs accordingly; and many schools, to minimize the problems of scheduling practice periods, have installed simplified language laboratory equipment in each foreign-language classroom, so that practice sessions can be held at any time during any class period.

A 1961–62 study of 133 secondary schools in New Jersey showed that over 50 percent of the schools scheduled practice sessions in the language laboratory only once a week. The 1961–62 data that Raymond F. Keating of Teachers College gathered from 21 school systems of the Metropolitan School Study Council (in the area surrounding New York City) indicate that the average student used the language laboratory for practice only one period per week. But data received by the Office of Education for 1962–63 from 9 States representing 866 secondary schools in all sections of the country show the following numbers of practice periods scheduled in the language laboratory for each student: 3 to 5 a week in 37 percent of the schools, 2 a week in 36 percent, and 1 a week in only 27 percent. A 1962–63 study in 10 New York City high schools documents the dramatic gains made by students who had *daily* language laboratory practice in contrast to the lack of gains made by students who had only one practice session.

*Fifth, the equipment must be good enough and flexible enough to permit efficient operation on a regular basis.*

Persons interested in learning about the importance of quality in language laboratory equipment and its relation to teaching and learning will find a detailed treatment of the subject in Alfred S. Hayes' *A Technical Guide for the Selection, Purchase, Use, and Maintenance of Language Laboratory Facilities.* (This publication is HEW Bulletin 1963 No. 37, OE–21024, and can be purchased for 50 cents from the Government Printing Office.)

## Research: A general statement

The problems of conducting research on teaching foreign languages in schools are many. The schools lack qualified staff and find it difficult to meet the administrative requirements for controlled teaching experiments; and most of the research and development in the use of language laboratories has been done in colleges and universities. According to John B. Carroll of Harvard University, most research studies on foreign-language teaching are not well designed and do not have adequate controls.

(Anyone seriously interested in research on foreign language teaching and on language laboratories should consult Dr. Carroll's chapter in *The Handbook of Research on Teaching* (a project of the American Educational Research Association), N. L. Gage, ed., Chicago, Rand McNally, 1963, and also *Research on Language Teaching: An Annotated International Bibliography for 1945–61,* by Nostrand and others, Seattle, University of Washington Press, 1962.)

Most of these studies point up the need for further research; much of the research establishes the worth of a particular program in a particular setting and is not necessarily applicable to another program in another setting. Responsible researchers usually caution readers against applying their conclusions indiscriminately and against misinterpreting the meaning of the findings. Dr. Carroll, for example, reported on a small experiment in which the obvious implications were not what he considered the true ones. The experiment compared two high school classes, one with a language laboratory and one without. Both groups did about as well in auditory comprehension, but the laboratory group did less well in standard tests on reading, vocabulary, and grammar. In these results Dr. Carroll found no reason to doubt the utility of the language laboratory—only evidence of the need to improve instruction in the laboratory.

There are those who hold that the usefulness of the language laboratory has already been established beyond doubt. Fred M. Hechinger, writing in the *New York Times,* May 19, 1963, said, "If the ability to speak a language is to be a first priority in foreign language study—and all but the most unreconstructed translation-minded educators today agree with this goal—then the usefulness of the language laboratory is self-evident." Many researchers question the need for further documentation of the usefulness of the language laboratory, as compared to the no-language-laboratory. Certain well-established principles underlying the learning of motor skills support the basic idea of the language laboratory. Some researchers also think that the contributions of machines to students' learning, whether these machines are teaching machines or language laboratories, do not constitute a single isolatable variable, especially since the program itself is so much more important than the vehicle by which it is presented.

But as Carroll and Nostrand both point out, there are many aspects of foreign language learning related to the use of language laboratories that do need further research.

Let us hope that administrators and teachers will continue to be interested in research on the teaching and learning of foreign languages and on the use of language laboratory facilities, and that those with the proper resources will themselves try a variety of experiments. Now that better testing

instruments for all four skills are available, much more valid results can be obtained. Let us hope, too, that teachers and administrators will make a practice of going to the primary sources of information: studying any piece of research thoroughly, especially when important decisions are to be based on it, is more important than accepting reports on the research as the final word.

### Research: Some specific studies

From several studies pertinent to our principal question—how effective is the language laboratory?—I have selected some of the findings for presentation here, to indicate the kind of useful clarification that research has provided on various aspects of utilizing the language laboratory.

★ In his master's thesis at the University of Maryland, Billy Smith presents the results of a questionnaire sent to secondary school foreign language teachers using language laboratories. Judging by the replies—from 245 teachers in 14 States—there is still considerable lag between theory and practice in the use of audiolingual procedures and language laboratory facilities.

Mr. Smith finds that teachers still are not consistent in their use of new methods and materials, that they lack training, experience, and confidence in the language and in coordinating work in the laboratory with work in the classroom. Many teachers believe that a prereading phase of instruction is too demanding, and they feel more secure if they rely on early use of written materials and on older, more familiar methods. Yet 63 percent of the respondents said that they were using the "audiolingual method" (described in the questionnaire as "memorization of basic material, such as dialogues, followed by oral drill designed to provide practice in managing common grammatical constructions"). Strangely enough, as many as 10 percent of these teachers were using tapes which do not provide for immediate correction of student responses. The findings in this study are symptomatic of the transitional era through which we are passing—an era which may continue for several more years.

**Laboratory equipment properly used is to the language student what the practice piano is to the piano student—the instrument on which the student can practice and practice until he acquires the skill he needs.**

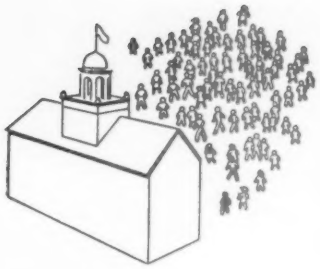
★ Two recent studies shed some light on a few of the variables resulting from the type of equipment used in the laboratory and the kind of practice schedules followed. Although the methods, materials, and tests used in these studies were apparently "transitional," the results do indicate that certain combinations of laboratory practice both in kind and in frequency, can be more productive than others.

The first of these studies concerned the relative effectiveness of four different kinds of laboratory practice for 523 second-year French students in 10 New York City high schools. Half of the experimental groups had practice sessions in the laboratory every day; the other half, only once a week. Half of the groups in each half used audioactive equipment exclusively; the rest used recording-playback equipment. The control groups used no electronic equipment at all.

The results indicate that the students who had only one laboratory practice period a week made no more gains than those in the control groups; in one school the control group even made greater gains than the once-a-week group. Students who had daily practice, however, made dramatic gains (a study in the same schools a year earlier showed that positive results could be achieved with two laboratory periods a week). In listening and speaking skills, the daily recording-playback group showed more striking gains than the daily audioactive group; and in overall gains the daily laboratory groups were superior to the no-equipment groups.

The second experiment was made with 4 groups of students in first-year

*Continued on page 39*



# ENROLLMENT, TEACHERS, AND SCHOOLHOUSING

## Highlights From the Fall 1963 Survey of Public Schools

CAROL JOY HOBSON and SAMUEL SCHLOSS

EVERY FALL State departments of education report to the Office of Education on selected basic items of information about public elementary and secondary schools. The statistical material which follows has been adapted from two advance releases and the comprehensive report which the Office of Education is preparing for publication.

### Growth of population

During the past year, the school-age population (ages 5–17 years, inclusive) continued to show a higher rate of growth than the total population. From October 1, 1962, to October 1, 1963 the estimated school-age population rose from 46,978,000 to 48,342,000, a gain of 1,364,000, or 3 percent. During the same period, the estimated total population increased from 186,601,000 to 189,306,000, or 1.4 percent.

### Pupil enrollments

Enrollments in public elementary and secondary schools rose to a new peak of 40.2 million in the fall of 1963, an increase of 1.5 million or 3.8 percent over the fall of 1962. The effects of the high postwar birthrate are being felt increasingly in high schools, where enrollments are growing more rapidly than in elementary schools. During the past year, elementary school enrollments rose 2.2 percent to 25.8 million, while secondary school enrollments rose 6.8 percent to 14.4 million.

*Mrs. Hobson and Mr. Schloss of the Division of Educational Statistics have been responsible for conducting the annual fall survey since its beginning in 1954.*

### High school graduates

About 1,711,000 students graduated from public high schools in 1962–63, representing 71 percent of the class that entered the ninth grade 4 years earlier. The proportion of ninth grade students staying on to graduation has been increasing slowly but steadily in recent years.

### Classroom teachers

Approximately 1,576,100 full-time and part-time classroom teachers were employed by local school districts—908,500 in elementary schools and 667,500 in secondary schools. This was a gain of 4.5 percent over the 1962 total, as compared with an increase of 3.8 percent in the number of pupils.

### Minimum requirements for standard teaching certificates

The minimum requirements for regular or standard teaching certificates in the various States include completion of prescribed semester hours covering (1) general education, (2) professional education, and (3) directed teaching. State departments of education were asked to report on the general education requirements for the lowest regular teaching certificate. For a regular elementary certificate, 45 States require a bachelor's degree, 4 States require 2 years of college, and 1 State requires less than 2 years. For regular high school certificates, 47 States require a bachelor's degree; the other 3 require a master's degree or its equivalent.

### Teachers with substandard credentials

Because of the shortage of fully qualified teachers, States permit the temporary employment of teachers with substandard credentials until an adequate supply of qualified teachers becomes available or until the temporary or emergency teachers obtain the necessary qualifications. The standards for "regular" certificates as well as for emergency or temporary certificates vary among the States. For this reason interstate comparisons should be made with caution. Last fall, more than 83,000 or 5.3 percent of the full- and part-time teachers employed in the public elementary and secondary schools failed to meet full State certification standards. Approximately two-thirds of all teachers with substandard credentials were employed in elementary schools.

### Local school districts

The number of local school districts has been dropping steadily for many years as a result of reorganization and consolidation of small and nonoperating districts. The 31,700 districts in the fall of 1963 represented about half the number 10 years earlier. Of the 1963 total, 3,900 districts did not operate schools but paid

tuition for their children to attend schools in adjacent districts.

### Classrooms completed

Local school districts completed about 65,300 classrooms during the 1962–63 school year, the lowest number completed in the past 7 years. Completions include new construction and the conversion of other space to instructional purposes.

### Classrooms abandoned

About 17,000 classrooms were abandoned during 1962–63 as a result of consolidation of school districts, population shifts, and obsolescence of buildings. This total includes the rooms converted from instructional purposes to other uses and rooms destroyed by fire, storms, or other causes.

### Classrooms available

The States reported that 1,487,000 publicly owned classrooms were available at the beginning of the 1963–64 school year, an increase of 48,300 over the number last year.

### Classrooms scheduled for completion

State education agencies reported that 59,770 classrooms are scheduled for completion by local school districts in 1963–64. However, experience with recent surveys indicates that completions may exceed this figure.

### Pupils in excess of capacity

About 1,659,000 public school pupils, representing 4.1 percent of the total enrollment, were in excess of normal capacity of accessible public school plants in the fall of 1963. These pupils were in overcrowded classrooms, in makeshift or improvised facilities, or were attending school for less than a full school day. This is about 8,000 less than the number in the fall of 1962.

These 1,659,000 pupils in excess of normal capacity do not represent the total number of pupils affected by insufficient public school classrooms since their classmates are also sharing the inadequate quarters. For example, if there are 42 pupils in a classroom designed for 30 pupils, only 12 are counted as "excess" enrollment, but all of the 42 pupils would be adversely affected.

### Pupils on curtailed sessions

Data on the number of pupils attending school on curtailed sessions include all pupils on so-called half-day sessions, double shifts, or reduced time. In the fall of 1963, 35 States and the District of Columbia reported a total of 409,000 pupils on curtailed sessions. About 61 percent of these pupils were in elementary schools.

The use of curtailed sessions is one of several expedients employed by school officials to accommodate pupils in excess of the normal capacity of available classrooms, frequently the last resort expedient. Other means of accommodating excess enrollments include overcrowding the classrooms, or the use of improvised, makeshift, or rented facilities.

About half of the pupils on curtailed sessions are included in the category of pupils in excess of normal capacity.

### Classroom shortage

Although 348,500 classrooms were completed during the past 5 years, the shortage of classrooms remains at a high level. During this period, the States have reported the following classroom need each fall: 1959—135,300; 1960—142,500; 1961—127,300; 1962—121,200; and 1963—124,300. Of the 124,300 classrooms needed in the fall of 1963 to house the pupils actually enrolled, 59,400 were needed to accommodate the 1,659,000 pupils in excess of normal capacity and 64,900 to replace unsatisfactory facilities. (The 64,900 figure does not represent all of the unsatisfactory rooms in the Nation, but only the rooms needed to replace those currently housing pupils.)

In the fall survey questionnaire, the Office of Education provided general guidelines for the States in determining the number of classrooms needed but did not establish national standards for normal capacity or unsatisfactory facilities. State education agencies in 34 States set statewide standards of normal capacity in the questionnaires they used for collecting data from their school districts. Few States, however, set specific standards for assessing unsatisfactory facilities. Because of changes in data-collection procedures in the States and because of varying State and local standards for determining normal capacity and unsatisfactory facilities, care should be taken in making comparisons between States and from year to year. The classroom shortage figures represent a general level of need rather than an absolute count based on uniform standards.

Other evidence of inadequacy in the condition of public school classrooms was released last July by the Office of Education. A *Fact Sheet* summarizing the results of the National Inventory of School Facilities, taken in the spring of 1962, shows the following facts: 235,000 or 16 percent of the 1,478,649 classrooms in use were built before 1920; 51,000 of these 235,000 classrooms were constructed of combustible materials; 154,000 classrooms, including 103,000 built after 1920, were constructed of combustible materials; 30 percent of the public school children attended school in buildings that had an average of 30 or more pupils per classroom. These figures were obtained in a building-by-building survey in which the concepts and definitions used were different from those in the annual fall survey. The Inventory figures are therefore not another set of classroom shortage figures; they do, however, provide related information which attests to the seriousness of the school-housing problem.

## Fall 1963 statistics on school districts, enrollment, teachers, and high school graduates in full-time public elementary and secondary day schools

| Region and State | Number of local basic administrative units (school districts) | Number of pupils enrolled | | | Number of classroom teachers | | | Number of classroom teachers with less than standard certificates | | | High school graduates, 1962–63 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Elementary [1] | Secondary [1] | Total | Elementary [1] | Secondary [1] | Total | Elementary [1] | Secondary [1] | |
| UNITED STATES | [2] 31,705 | 40,217,215 | 25,816,893 | 14,400,322 | 1,576,062 | 908,536 | 667,526 | [3] 83,200 | [3] 55,000 | [3] 28,200 | 1,710,844 |
| NORTH ATLANTIC | 4,352 | 9,416,063 | 5,640,484 | 3,775,579 | 393,218 | 210,777 | 182,441 | 27,562 | 16,118 | 11,444 | 419,442 |
| Connecticut | 177 | 542,179 | 379,664 | 162,515 | 23,187 | 13,845 | 9,342 | 1,750 | 1,000 | 750 | 22,378 |
| Delaware | 86 | 99,127 | 57,264 | 41,863 | 4,206 | 2,132 | [4] 2,074 | 459 | 304 | [5] 155 | 4,034 |
| Maine | 432 | 215,518 | 145,588 | 69,930 | 9,255 | 5,361 | 3,894 | 441 | 307 | 134 | 8,513 |
| Maryland | 24 | 704,379 | 405,400 | 298,979 | 26,785 | 14,128 | 12,657 | [6] 6,771 | [6] 4,627 | [6] 2,144 | 28,815 |
| Massachusetts | 392 | 977,431 | 596,033 | 381,398 | 40,817 | 22,134 | 18,683 | 1,285 | 618 | 667 | 43,909 |
| New Hampshire | 217 | 120,528 | 77,264 | 43,264 | 5,276 | 3,128 | 2,148 | 161 | 90 | 71 | 4,840 |
| New Jersey | 593 | 1,212,712 | 800,919 | 411,793 | 53,892 | 32,228 | 21,664 | 6,526 | 4,959 | 1,567 | 54,439 |
| New York [7] | 1,115 | 3,052,375 | 1,764,565 | 1,287,810 | 132,499 | 68,509 | 63,990 | 6,757 | 2,576 | 4,181 | 139,500 |
| Pennsylvania | 1,005 | 2,125,913 | 1,186,650 | 939,263 | 82,508 | 41,001 | 41,507 | 1,050 | 336 | 714 | 99,600 |
| Rhode Island [7] | 41 | 147,301 | 84,325 | 62,976 | 6,096 | 3,118 | 2,978 | 452 | 195 | 257 | 6,485 |
| Vermont | 269 | 80,882 | 55,020 | 25,862 | 3,670 | 2,279 | 1,391 | 188 | 69 | 119 | 3,402 |
| District of Columbia | 1 | 137,718 | 87,792 | 49,926 | 5,027 | 2,914 | 2,113 | 1,722 | 1,037 | 685 | 3,527 |
| GREAT LAKES AND PLAINS | 18,555 | 11,230,906 | 7,375,222 | 3,855,684 | 454,085 | 267,785 | 186,300 | 19,893 | 13,369 | 6,524 | 498,876 |
| Illinois | 1,435 | 1,980,017 | 1,292,818 | 687,199 | 82,367 | 50,321 | 32,046 | 2,615 | 1,463 | 1,152 | 82,266 |
| Indiana | 669 | 1,072,108 | 667,923 | 404,185 | 41,437 | 23,114 | 18,323 | 986 | 775 | 211 | 46,501 |
| Iowa | 1,164 | 607,823 | 386,189 | 221,634 | 27,415 | 14,862 | 12,553 | 174 | 123 | 51 | 29,807 |
| Kansas [8] | 2,023 | 496,875 | 359,920 | 136,955 | 22,983 | 14,979 | 8,004 | ..... | ..... | ..... | 25,621 |
| Michigan [8] | 1,536 | 1,852,528 | 1,108,608 | 743,920 | 69,174 | 39,882 | 29,292 | 5,525 | 3,723 | 1,802 | 75,883 |
| Minnesota | 2,148 | 760,026 | 430,313 | 329,713 | 31,228 | 15,834 | 15,394 | 482 | 397 | 85 | 38,249 |
| Missouri [8] | 1,532 | 881,050 | 650,450 | 230,600 | 33,810 | 22,304 | 11,506 | 603 | 571 | 32 | 39,700 |
| Nebraska | 2,927 | 310,229 | 195,222 | 115,007 | 14,666 | 8,701 | 5,965 | 514 | 402 | 112 | 14,768 |
| North Dakota | 709 | 145,184 | 91,115 | 54,069 | 7,009 | 4,033 | 2,976 | 10 | 3 | 7 | 8,155 |
| Ohio [8] | 800 | 2,162,663 | 1,585,255 | 577,408 | 82,815 | 49,330 | 33,485 | 8,200 | 5,200 | 3,000 | 87,193 |
| South Dakota | 2,873 | 162,843 | 108,731 | 54,112 | 8,350 | 5,435 | 2,915 | 384 | 352 | 32 | 8,174 |
| Wisconsin | 739 | 799,560 | 498,678 | 300,882 | 32,831 | 18,990 | 13,841 | 400 | 360 | 40 | 42,559 |
| SOUTHEAST | 1,834 | 9,463,839 | 6,110,525 | 3,353,314 | 343,882 | 201,630 | 142,252 | [9] | [9] | [9] | 366,370 |
| Alabama [7] | 117 | 839,410 | 481,738 | 357,672 | 27,634 | 14,740 | 12,894 | 1,995 | 1,649 | 346 | 32,351 |
| Arkansas | 415 | 439,617 | 246,093 | 193,524 | 16,325 | 8,666 | 7,659 | 880 | 506 | 374 | 19,109 |
| Florida | 67 | 1,143,582 | 654,645 | 488,937 | 43,894 | 23,457 | 20,437 | 282 | 230 | 52 | 44,168 |
| Georgia [10] | 196 | 1,020,021 | 676,510 | 343,511 | 35,918 | 22,228 | 13,690 | 463 | 294 | 169 | 36,259 |
| Kentucky | 204 | 659,228 | 438,223 | 221,005 | 24,830 | 15,693 | 9,137 | 1,595 | 1,465 | 130 | 24,093 |
| Louisiana [8] | 67 | [11] 762,022 | [11] 577,706 | [11] 184,316 | [11] 28,392 | [11] 16,916 | [11] 11,476 | 1,410 | 911 | 499 | 28,823 |
| Mississippi | 150 | 573,177 | 356,573 | 216,604 | 19,522 | 11,123 | 8,399 | 813 | 464 | 349 | 20,841 |
| North Carolina [8] | 171 | 1,167,646 | 848,234 | 319,412 | 42,271 | 28,662 | 13,609 | 1,485 | 1,223 | 262 | 48,456 |
| South Carolina | 108 | 627,451 | 388,117 | 239,334 | 21,885 | 12,512 | 9,373 | 65 | 33 | 32 | 24,310 |
| Tennessee | 154 | 853,832 | 566,134 | 287,698 | 29,575 | 18,921 | 10,654 | 1,050 | 850 | 200 | 34,407 |
| Virginia [10] | 130 | 939,137 | 625,701 | 313,436 | 36,106 | 20,939 | 15,167 | 1,879 | 1,617 | 262 | 34,197 |
| West Virginia | 55 | 438,716 | 250,851 | 187,865 | 17,530 | 7,773 | 9,757 | [9] | [9] | [9] | 19,356 |
| WEST AND SOUTHWEST | 6,964 | 10,106,407 | 6,690,662 | 3,415,745 | 384,877 | 228,344 | 156,533 | 22,737 | 15,355 | 7,382 | 426,156 |
| Alaska | 32 | 53,145 | 38,255 | 14,890 | 2,229 | 1,545 | 684 | 56 | 48 | 8 | 1,565 |
| Arizona [8] | 306 | 350,210 | 257,147 | 93,063 | 14,517 | 10,007 | 4,510 | 28 | 22 | 6 | 14,392 |
| California | 1,536 | 3,946,800 | 2,604,400 | 1,342,400 | 139,000 | 85,000 | 54,000 | 8,500 | 5,500 | 3,000 | 173,500 |
| Colorado | 222 | 459,820 | 276,248 | 183,572 | 20,084 | 10,826 | 9,258 | 237 | 190 | 47 | 17,753 |
| Hawaii [7] | 1 | 155,317 | 92,035 | 63,282 | 5,230 | 3,093 | 2,137 | 81 | 22 | 59 | 7,730 |
| Idaho | 116 | 170,148 | 94,285 | 75,863 | 6,897 | 3,527 | 3,370 | 1,448 | 1,058 | 390 | 8,681 |
| Montana | 984 | 161,230 | 106,689 | 54,541 | 7,352 | 4,811 | 2,541 | 205 | 200 | 5 | 7,386 |
| Nevada | 17 | 92,039 | 58,751 | 33,288 | 3,849 | 2,326 | 1,523 | ..... | ..... | ..... | 2,821 |
| New Mexico | 89 | 251,026 | 147,061 | 103,965 | 10,087 | 5,548 | 4,539 | 66 | 54 | 12 | 8,852 |
| Oklahoma [7] | 1,160 | 585,855 | 327,442 | 258,413 | 21,800 | 12,200 | 9,600 | ..... | ..... | ..... | 26,249 |
| Oregon | 441 | 429,639 | 269,938 | 159,701 | 19,401 | 11,389 | 8,012 | 1,880 | 1,830 | 50 | 20,872 |
| Texas [8] | 1,421 | 2,390,858 | 1,805,175 | 585,683 | 93,176 | 55,034 | 38,142 | 8,562 | 5,062 | 3,500 | 87,640 |
| Utah | 40 | 268,839 | 157,805 | 111,034 | 9,951 | 5,360 | 4,591 | 330 | 214 | 116 | 11,833 |
| Washington | 399 | 704,102 | 403,704 | 300,398 | 27,151 | 14,963 | 12,188 | 1,044 | 955 | 89 | 33,141 |
| Wyoming [7] | 200 | 87,379 | 51,727 | 35,652 | 4,153 | 2,715 | 1,438 | 300 | 200 | 100 | 3,741 |
| OUTLYING PARTS: | | | | | | | | | | | |
| American Samoa [6] | 1 | 6,869 | 5,376 | 1,493 | 405 | 314 | 91 | 5 | ..... | 5 | 106 |
| Canal Zone [7] | 1 | 13,051 | 7,534 | 5,517 | 515 | 287 | 228 | ..... | ..... | ..... | 837 |
| Guam [7] | 1 | 15,250 | 8,982 | 6,268 | 556 | 304 | 252 | 6 | 3 | 3 | 459 |
| Puerto Rico [7] | 1 | 602,516 | 396,953 | 205,563 | 15,655 | 9,440 | 6,215 | 2,648 | 435 | 2,213 | 15,822 |
| Virgin Islands [7] | 1 | 8,264 | 5,430 | 2,834 | 326 | 177 | 149 | 11 | 10 | 1 | 180 |

[1] Unless otherwise noted, data are classified by type of school organization rather than by grade group.
[2] Includes 3,942 districts which did not operate any schools.
[3] Includes estimate for nonreporting State.
[4] Includes 113 teachers who teach at both levels.
[5] Includes 15 teachers who teach at both levels.
[6] Estimated by State.
[7] Data are reported by specified grade-group: Kindergarten through grade 6 for elementary, and grades 7 through 12 for secondary.
[8] Data are reported by specified grade-group: Kindergarten through grade 8 for elementary, and grades 9 through 12 for secondary.
[9] Data not available.
[10] Data are reported by specified grade-group: Kindergarten through grade 7 for elementary, and grades 8 through 12 for secondary.
[11] Data as of June 1963.

## Fall 1963 statistics on schoolhousing in full-time public elementary and secondary day schools

[All data as of fall 1963 unless otherwise specified]

| Region and State | Number of pupils in excess of normal capacity | | | Number of pupils on curtailed sessions | Instruction rooms available, completed, and abandoned | | | Additional instruction rooms needed | | | Instruction rooms scheduled for completion during 1963–64 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Elementary | Secondary | | Completed during 1962–63 | Abandoned during 1962–63 | Available, beginning 1963–64 | Total | To accommodate excess enrollment | To replace unsatisfactory facilities | |
| UNITED STATES [1] | 1,659,000 | 876,000 | 783,000 | [2] 408,931 | 65,300 | 17,000 | 1,487,000 | 124,300 | 59,400 | 64,900 | 59,770 |
| NORTH ATLANTIC | 513,126 | 268,707 | 244,419 | 209,383 | 13,902 | 3,202 | 340,711 | 34,705 | 18,495 | 16,210 | 12,455 |
| Connecticut | 14,823 | 9,669 | 5,154 | 16,550 | 1,202 | 262 | 19,810 | 870 | 557 | 313 | 725 |
| Delaware | 1,580 | 863 | 717 | ..... | 275 | 12 | 3,847 | 121 | 55 | 66 | 210 |
| Maine | 9,755 | 5,609 | 4,146 | 7,551 | 500 | 323 | 8,280 | 849 | 392 | 457 | 246 |
| Maryland | 77,127 | 43,095 | 34,032 | 9,070 | 1,316 | 69 | 23,480 | 2,901 | 2,390 | 511 | 1,199 |
| Massachusetts | 29,805 | 16,644 | 13,161 | 18,508 | 1,786 | 336 | 38,202 | 2,079 | 1,196 | 883 | 1,031 |
| New Hampshire | 6,377 | 3,694 | 2,683 | 1,085 | 255 | 41 | 4,725 | 319 | 240 | 79 | 209 |
| New Jersey | 83,505 | 49,082 | 34,423 | 58,102 | 1,890 | 302 | 44,331 | 4,028 | 3,177 | 851 | 2,486 |
| New York | 175,666 | 90,123 | 85,543 | 82,633 | 3,657 | 613 | [3] 109,156 | 14,569 | 5,794 | 8,775 | 4,051 |
| Pennsylvania | 82,567 | 31,771 | 50,796 | 11,409 | 2,598 | 1,131 | 75,979 | 7,190 | 3,590 | 3,600 | 2,056 |
| Rhode Island | 9,850 | 4,937 | 4,913 | 2,318 | 174 | 87 | 5,161 | 539 | 318 | 221 | 82 |
| Vermont | 6,418 | 3,128 | 3,290 | 797 | 69 | 26 | 3,411 | 447 | 227 | 220 | 56 |
| District of Columbia | 15,653 | 10,092 | 5,561 | 1,360 | 180 | ..... | 4,329 | 793 | 559 | 234 | 104 |
| GREAT LAKES AND PLAINS | 436,198 | 249,349 | 186,849 | [2] 79,749 | [4] | [4] | 430,519 | 32,961 | 15,444 | 17,517 | 16,577 |
| Illinois | 98,382 | 62,211 | 36,171 | 9,726 | [4] | [4] | 73,164 | 7,973 | 3,279 | 4,694 | 2,437 |
| Indiana | 33,683 | 17,461 | 16,222 | 7,088 | 1,411 | 430 | 38,159 | 2,722 | 1,212 | 1,510 | 1,355 |
| Iowa | 20,066 | 9,395 | 10,671 | ..... | 586 | 114 | 27,054 | 668 | 550 | 118 | 580 |
| Kansas | 14,000 | 9,000 | 5,000 | [4] | 650 | 250 | 24,124 | 650 | 500 | 150 | 550 |
| Michigan | 58,342 | 30,108 | 28,234 | 49,966 | 2,688 | 846 | 63,635 | 6,450 | 2,333 | 4,117 | 3,072 |
| Minnesota | 31,123 | 14,279 | 16,844 | 1,783 | 1,426 | 543 | 30,896 | 2,594 | 1,277 | 1,317 | 1,051 |
| Missouri | 60,592 | 35,096 | 25,496 | ..... | 1,389 | 218 | 34,444 | 3,980 | 1,611 | 2,369 | 1,943 |
| Nebraska | 18,833 | 11,126 | 7,707 | 1,732 | 582 | 273 | 14,744 | 1,435 | 838 | 597 | 664 |
| North Dakota | 4,429 | 2,818 | 1,611 | ..... | 408 | 268 | 6,768 | 348 | 148 | 200 | 148 |
| Ohio | 63,000 | 41,000 | 22,000 | 7,100 | 3,810 | 794 | 78,900 | 3,440 | 2,240 | 1,200 | 3,400 |
| South Dakota | 10,491 | 6,518 | 3,973 | 1,980 | 289 | 193 | 8,091 | 752 | 461 | 291 | 178 |
| Wisconsin | 23,257 | 10,337 | 12,920 | 374 | 1,840 | 546 | 30,540 | 1,949 | 995 | 954 | 1,199 |
| SOUTHEAST | [4] | [4] | [4] | [2] 64,374 | [4] | [4] | [4] | [4] | [4] | [4] | [4] |
| Alabama | 40,236 | 26,100 | 14,136 | 10,826 | 854 | 500 | 27,924 | 2,044 | 1,434 | 610 | 752 |
| Arkansas | 21,306 | 8,769 | 12,537 | 2,451 | 878 | 406 | 15,885 | 2,080 | 840 | 1,240 | 942 |
| Florida | 74,128 | 29,334 | 44,794 | 24,038 | 1,968 | 299 | 38,721 | 4,797 | 2,466 | 2,331 | 1,697 |
| Georgia | 73,559 | 36,092 | 37,467 | 10,987 | 1,498 | 470 | 36,197 | 3,413 | 2,334 | 1,079 | 1,366 |
| Kentucky | 30,267 | 14,053 | 16,214 | 1,191 | 1,378 | 752 | 24,290 | 3,836 | 1,129 | 2,707 | 1,061 |
| Louisiana | 20,112 | 16,200 | 3,912 | 1,175 | 1,106 | 387 | 29,053 | 2,288 | 754 | 1,534 | 1,203 |
| Mississippi | 16,790 | 11,245 | 5,545 | 154 | 954 | 354 | 19,208 | 1,371 | 645 | 726 | 637 |
| North Carolina | 72,669 | 25,463 | 47,206 | 587 | 1,390 | 602 | 43,334 | 6,100 | 2,470 | 3,630 | 1,426 |
| South Carolina | 17,056 | 6,178 | 10,878 | ..... | 631 | 172 | 21,482 | 1,185 | 608 | 577 | 391 |
| Tennessee | 39,493 | 23,001 | 16,492 | ..... | 1,001 | 602 | 30,471 | 2,468 | 1,286 | 1,182 | 1,595 |
| Virginia | 55,139 | 26,522 | 28,617 | 12,965 | 2,348 | 709 | 33,961 | 3,463 | 2,108 | 1,355 | 2,295 |
| West Virginia | [4] | [4] | [4] | [4] | [4] | [4] | [4] | [4] | [4] | [4] | [4] |
| WEST AND SOUTHWEST | 232,017 | 129,292 | 102,725 | [2] 55,425 | 19,544 | 2,941 | 377,882 | 20,610 | 8,690 | 11,920 | 17,052 |
| Alaska | 5,277 | 4,393 | 884 | [4] | 157 | 14 | 2,052 | 364 | 173 | 191 | 144 |
| Arizona | 16,741 | 8,627 | 8,114 | 8,473 | 740 | 111 | 13,249 | 947 | 552 | 395 | 466 |
| California | 32,500 | 30,000 | 2,500 | [4] | 8,000 | 500 | 140,500 | 1,600 | 1,100 | 500 | 8,000 |
| Colorado | 32,401 | 15,998 | 16,403 | 4,607 | 1,093 | 489 | 16,228 | 1,858 | 1,246 | 612 | 937 |
| Hawaii | 4,794 | 2,895 | 1,899 | ..... | 289 | 125 | 5,765 | 590 | 153 | 437 | 264 |
| Idaho | 3,514 | 2,828 | 686 | 175 | 306 | 124 | 6,882 | 538 | 232 | 306 | 106 |
| Montana | 6,137 | 3,357 | 2,780 | 11,040 | 410 | 188 | 7,480 | 433 | 250 | 183 | 275 |
| Nevada | 9,674 | 6,947 | 2,727 | 14,174 | 208 | 38 | 3,234 | 414 | 350 | 64 | 410 |
| New Mexico | 11,051 | 5,727 | 5,324 | ..... | 618 | 122 | 9,711 | 872 | 351 | 521 | 491 |
| Oklahoma | 20,000 | 12,000 | 8,000 | [4] | 491 | 203 | 23,403 | 1,950 | 650 | 1,300 | 500 |
| Oregon | 10,751 | 3,773 | 6,978 | 486 | 859 | 177 | 17,830 | 741 | 469 | 272 | 608 |
| Texas | 16,971 | 10,440 | 6,531 | 8,610 | 4,048 | 265 | 90,338 | 4,592 | 551 | 4,041 | 3,447 |
| Utah | 21,696 | 13,119 | 8,577 | 7,860 | 451 | 110 | 9,078 | 1,169 | 767 | 402 | 595 |
| Washington | 37,510 | 6,688 | 30,822 | [4] | 1,759 | 423 | 28,104 | 4,264 | 1,743 | 2,521 | 684 |
| Wyoming | 3,000 | 2,500 | 500 | ..... | 115 | 52 | 4,028 | 278 | 103 | 175 | 125 |
| OUTLYING PARTS: | | | | | | | | | | | |
| American Samoa | 250 | ..... | 250 | ..... | 10 | ..... | 310 | 204 | 10 | 194 | 52 |
| Canal Zone | 925 | 925 | ..... | ..... | 67 | ..... | 517 | 31 | 31 | ..... | 10 |
| Guam | 2,014 | 78 | 1,936 | ..... | 72 | 140 | 491 | 199 | 72 | 127 | 5 |
| Puerto Rico | 163,181 | 123,467 | 39,714 | 320,754 | 447 | 110 | 13,266 | 4,822 | 4,222 | 600 | 630 |
| Virgin Islands | 1,418 | 690 | 728 | ..... | 29 | 5 | 286 | 50 | 50 | ..... | 36 |

[1] National totals include estimates for nonreporting States.
[2] Incomplete; total for States reporting.
[3] Incomplete.
[4] Data not available.

## Enrollment in full-time public elementary and

[Subtotals in this table are shown by grade

| Region and State | Total | Total K–8, including elementary ungraded | Kindergarten through grade 8 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Kindergarten | 1st grade | 2d grade | 3d grade | 4th grade | 5th grade |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| UNITED STATES | 40,217,215 | 29,354,046 | 2,131,473 | 3,900,838 | 3,592,779 | 3,450,842 | 3,360,451 | 3,266,562 |
| NORTH ATLANTIC | 9,416,063 | 6,770,363 | 685,761 | 872,257 | 801,698 | 762,384 | 744,101 | 718,622 |
| Connecticut | 542,179 | 404,702 | 48,405 | 53,613 | 47,999 | 46,487 | 44,301 | 42,318 |
| Delaware | 99,127 | 72,155 | 1,681 | 10,768 | 9,551 | 8,928 | 8,580 | 8,309 |
| Maine | 215,518 | 160,624 | 16,781 | 19,952 | 19,090 | 18,175 | 17,910 | 17,624 |
| Maryland | 704,379 | 513,826 | 28,020 | 69,212 | 63,649 | 60,639 | 58,789 | 56,453 |
| Massachusetts | 977,431 | 701,744 | 52,231 | 95,006 | 86,130 | 83,306 | 80,273 | 77,080 |
| New Hampshire | 120,528 | 87,069 | 4,353 | 11,979 | 11,071 | 10,393 | 9,883 | 9,862 |
| New Jersey | 1,212,712 | 875,565 | 112,129 | 108,476 | 99,611 | 95,687 | 94,179 | 90,766 |
| New York | 3,052,375 | 2,199,400 | 274,808 | 270,900 | 253,442 | 245,268 | 234,963 | 226,389 |
| Pennsylvania | 2,125,913 | 1,484,850 | 125,000 | 193,150 | 178,100 | 161,500 | 165,100 | 161,700 |
| Rhode Island | 147,301 | 105,455 | 9,015 | 14,412 | 12,483 | 12,091 | 11,909 | 11,145 |
| Vermont | 80,882 | 60,305 | 1,975 | 8,205 | 7,457 | 7,459 | 7,022 | 7,172 |
| District of Columbia | 137,718 | 104,668 | 11,363 | 16,584 | 13,115 | 12,451 | 11,192 | 9,804 |
| GREAT LAKES AND PLAINS | 11,230,906 | 8,135,117 | 886,505 | 1,046,904 | 963,209 | 923,552 | 881,134 | 861,168 |
| Illinois | 1,980,017 | 1,421,951 | 155,306 | 184,610 | 173,694 | 165,933 | 144,979 | 151,595 |
| Indiana | 1,072,108 | 777,463 | 57,796 | 103,863 | 93,893 | 90,429 | 88,264 | 86,646 |
| Iowa | 607,823 | 437,803 | 53,599 | 49,217 | 47,928 | 47,453 | 47,367 | 46,312 |
| Kansas | 496,875 | 359,920 | 37,328 | 45,925 | 43,298 | 41,642 | 40,491 | 38,619 |
| Michigan | 1,852,528 | 1,371,067 | 186,473 | 174,354 | 159,235 | 150,886 | 146,302 | 139,444 |
| Minnesota | 760,026 | 534,172 | 56,558 | 66,966 | 62,230 | 59,851 | 58,966 | 57,397 |
| Missouri | 881,050 | 650,450 | 52,250 | 84,348 | 78,672 | 77,167 | 73,680 | 71,498 |
| Nebraska | 310,229 | 224,737 | 28,043 | 26,708 | 25,660 | 25,310 | 24,536 | 24,077 |
| North Dakota | 145,184 | 103,281 | 2,472 | 14,008 | 13,303 | 12,430 | 12,255 | 12,511 |
| Ohio | 2,162,663 | 1,585,255 | 168,529 | 214,254 | 189,948 | 178,274 | 173,135 | 164,518 |
| South Dakota | 162,843 | 117,837 | 7,172 | 14,963 | 14,510 | 14,232 | 13,892 | 13,421 |
| Wisconsin | 799,560 | 551,181 | 80,977 | 67,688 | 60,838 | 59,945 | 57,267 | 55,130 |
| SOUTHEAST | 9,463,839 | 7,008,167 | 31,603 | 992,269 | 912,061 | 890,498 | 871,795 | 846,750 |
| Alabama | 839,410 | 628,299 | ..... | 90,488 | 82,346 | 80,919 | 78,821 | 76,135 |
| Arkansas | 439,617 | 315,036 | ..... | 43,768 | 38,386 | 40,549 | 40,016 | 39,405 |
| Florida | 1,143,582 | 839,612 | 5,082 | 119,688 | 111,148 | 106,280 | 104,463 | 100,899 |
| Georgia | 1,020,021 | 762,004 | 10,792 | 106,568 | 99,767 | 95,674 | 93,627 | 90,656 |
| Kentucky | 659,228 | 482,531 | 1,173 | 69,168 | 62,232 | 60,317 | 59,642 | 57,957 |
| Louisiana [1] | 762,022 | 577,706 | 6,783 | 84,783 | 75,901 | 74,259 | 72,328 | 68,514 |
| Mississippi | 573,177 | 433,368 | ..... | 63,166 | 58,230 | 56,361 | 55,098 | 53,080 |
| North Carolina | 1,167,646 | 848,234 | ..... | 115,367 | 109,367 | 107,063 | 106,089 | 103,301 |
| South Carolina | 627,451 | 468,908 | ..... | 66,043 | 61,210 | 59,283 | 59,188 | 56,890 |
| Tennessee | 853,832 | 637,344 | 937 | 92,242 | 81,567 | 81,704 | 80,222 | 76,964 |
| Virginia | 939,137 | 703,666 | 6,836 | 97,375 | 92,002 | 90,295 | 88,252 | 84,971 |
| West Virginia | 438,716 | 311,459 | ..... | 43,613 | 39,905 | 37,794 | 34,049 | 37,978 |
| WEST AND SOUTHWEST | 10,106,407 | 7,440,399 | 527,604 | 989,408 | 915,811 | 874,408 | 863,421 | 840,022 |
| Alaska | 53,145 | 42,356 | 2,823 | 6,264 | 5,806 | 5,334 | 5,176 | 4,719 |
| Arizona | 350,210 | 257,147 | 7,082 | 38,732 | 32,566 | 31,251 | 30,801 | 30,116 |
| California | 3,946,800 | 2,910,700 | 342,600 | 361,900 | 339,500 | 321,700 | 317,500 | 311,600 |
| Colorado | 459,820 | 338,433 | 34,997 | 42,632 | 39,915 | 38,571 | 38,048 | 36,599 |
| Hawaii | 155,317 | 114,024 | 13,031 | 13,864 | 13,603 | 13,026 | 12,982 | 12,499 |
| Idaho | 170,148 | 119,913 | ..... | 16,292 | 15,730 | 15,341 | 15,131 | 14,678 |
| Montana | 161,230 | 116,550 | 3,433 | 16,151 | 14,720 | 14,364 | 14,118 | 13,839 |
| Nevada | 92,039 | 69,768 | 7,692 | 9,291 | 8,575 | 8,151 | 7,671 | 7,438 |
| New Mexico | 251,026 | 183,758 | ..... | 29,491 | 24,074 | 22,909 | 22,692 | 21,920 |
| Oklahoma | 585,855 | 420,983 | 17,265 | 56,588 | 53,224 | 51,993 | 50,498 | 49,130 |
| Oregon | 429,639 | 299,949 | 9,517 | 38,337 | 36,742 | 36,653 | 36,157 | 36,906 |
| Texas | 2,390,858 | 1,805,175 | 29,000 | 264,783 | 240,148 | 226,520 | 225,174 | 214,749 |
| Utah | 268,839 | 197,575 | 13,459 | 25,288 | 24,397 | 23,877 | 23,515 | 22,981 |
| Washington | 704,102 | 498,907 | 41,482 | 61,246 | 58,922 | 56,881 | 56,358 | 55,689 |
| Wyoming | 87,379 | 65,161 | 5,223 | 8,549 | 7,889 | 7,837 | 7,600 | 7,159 |
| OUTLYING AREAS: | | | | | | | | |
| American Samoa | 6,869 | 5,376 | ..... | 663 | 1,051 | 637 | 627 | 717 |
| Canal Zone | 13,051 | 9,428 | 1,038 | 1,191 | 1,129 | 1,101 | 1,035 | 978 |
| Guam | 15,250 | 11,308 | ..... | 1,784 | 1,567 | 1,422 | 1,337 | 1,359 |
| Puerto Rico | 602,516 | 487,489 | 1,593 | 79,314 | 73,054 | 70,101 | 64,436 | 57,788 |
| Virgin Islands | 8,264 | 6,843 | 448 | 909 | 883 | 846 | 820 | 787 |

[1] Data as of June 1963.

## secondary day schools, by grade and by State: Fall 1963

group rather than by organizational level]

| Kindergarten through grade 8—Continued | | | | Total 9–12, including postgraduate and secondary ungraded | Grades 9 through 12 and postgraduate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6th grade | 7th grade | 8th grade | Elementary ungraded | | 9th grade | 10th grade | 11th grade | 12th grade | Post-graduate | Secondary ungraded |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 3,198,980 | 3,140,969 | 2,981,150 | 330,002 | 10,863,169 | 3,080,326 | 2,901,868 | 2,645,829 | 2,075,814 | 5,768 | 153,564 |
| 707,072 | 706,799 | 663,833 | 107,836 | 2,645,700 | 717,191 | 684,712 | 651,653 | 528,349 | 3,257 | 60,538 |
| 41,428 | 38,632 | 36,480 | 5,039 | 137,477 | 37,972 | 36,065 | 34,748 | 28,610 | 82 | ..... |
| 7,834 | 7,968 | 7,359 | 1,177 | 26,972 | 7,612 | 6,982 | 6,459 | 5,247 | ..... | 672 |
| 17,198 | 16,925 | 16,184 | 785 | 54,894 | 15,904 | 14,694 | 14,085 | 10,032 | 179 | ..... |
| 53,611 | 55,950 | 52,541 | 14,962 | 190,553 | 53,428 | 52,072 | 46,678 | 35,864 | 18 | 2,493 |
| 74,916 | 72,752 | 70,417 | 9,633 | 275,687 | 73,184 | 71,906 | 66,245 | 55,578 | 1,772 | 7,002 |
| 9,718 | 9,923 | 9,302 | 585 | 33,459 | 9,478 | 9,064 | 8,481 | 6,369 | 67 | ..... |
| 90,077 | 88,799 | 83,212 | 12,629 | 337,147 | 92,447 | 87,547 | 83,389 | 70,602 | 407 | 2,755 |
| 224,861 | 226,650 | 208,185 | 33,934 | 852,975 | 235,497 | 217,052 | 209,484 | 174,000 | ..... | 16,942 |
| 159,800 | 162,400 | 154,900 | 23,200 | 641,063 | 167,000 | 166,100 | 161,500 | 125,800 | 500 | 20,163 |
| 10,906 | 10,984 | 10,146 | 2,364 | 41,846 | 10,952 | 10,656 | 10,160 | 8,462 | 152 | 1,464 |
| 6,938 | 7,178 | 6,869 | 30 | 20,577 | 6,038 | 5,420 | 5,071 | 3,959 | 69 | 20 |
| 9,785 | 8,638 | 8,238 | 3,498 | 33,050 | 7,679 | 7,154 | 5,353 | 3,826 | 11 | 9,027 |
| 857,416 | 827,922 | 795,377 | 91,930 | 3,095,789 | 863,783 | 820,143 | 771,150 | 597,628 | 1,988 | 41,097 |
| 160,171 | 134,348 | 136,508 | 14,807 | 558,066 | 159,362 | 143,238 | 143,662 | 103,408 | 51 | 8,345 |
| 85,242 | 85,055 | 80,610 | 5,665 | 294,645 | 83,450 | 78,608 | 74,203 | 57,138 | 81 | 1,165 |
| 46,915 | 47,380 | 44,797 | 6,835 | 170,020 | 45,836 | 44,591 | 44,491 | 34,421 | 25 | 656 |
| 37,324 | 36,819 | 36,567 | 1,907 | 136,955 | 40,142 | 34,924 | 32,116 | 29,445 | ..... | 328 |
| 136,912 | 135,397 | 127,062 | 15,000 | 481,461 | 132,009 | 128,513 | 117,580 | 88,359 | ..... | 15,000 |
| 56,488 | 57,091 | 54,000 | 4,625 | 225,854 | 59,216 | 58,115 | 57,414 | 47,601 | 1,794 | 1,714 |
| 68,611 | 66,431 | 64,893 | 12,900 | 230,600 | 67,683 | 66,314 | 52,471 | 43,538 | ..... | 594 |
| 23,931 | 23,230 | 22,366 | 876 | 85,492 | 23,436 | 22,800 | 22,117 | 17,023 | 5 | 111 |
| 12,604 | 11,867 | 11,339 | 492 | 41,903 | 11,336 | 10,844 | 10,527 | 9,090 | ..... | 106 |
| 160,424 | 161,976 | 152,785 | 21,412 | 577,408 | 162,463 | 155,032 | 141,505 | 107,669 | ..... | 10,739 |
| 13,459 | 13,229 | 12,660 | 299 | 45,006 | 12,445 | 11,926 | 10,820 | 9,533 | ..... | 282 |
| 55,335 | 55,099 | 51,790 | 7,112 | 248,379 | 66,405 | 65,238 | 64,244 | 50,403 | 32 | 2,057 |
| 823,995 | 822,053 | 776,018 | 41,125 | 2,455,672 | 748,891 | 676,402 | 579,643 | 444,825 | 112 | 5,799 |
| 73,029 | 75,547 | 71,014 | ..... | 211,111 | 66,817 | 63,459 | 45,160 | 35,675 | ..... | ..... |
| 38,123 | 38,156 | 36,633 | ..... | 124,581 | 35,426 | 33,551 | 31,078 | 24,526 | ..... | ..... |
| 97,676 | 99,538 | 91,174 | 3,664 | 303,970 | 87,812 | 83,583 | 73,589 | 57,664 | ..... | 1,322 |
| 88,345 | 85,637 | 85,494 | 5,444 | 258,017 | 81,889 | 70,902 | 60,121 | 44,944 | ..... | 161 |
| 57,043 | 57,524 | 54,071 | 3,404 | 176,697 | 53,431 | 47,077 | 42,141 | 32,815 | ..... | 1,233 |
| 65,985 | 65,352 | 61,039 | 2,762 | 184,316 | 60,012 | 51,899 | 40,919 | 31,353 | 3 | 130 |
| 50,625 | 50,561 | 45,196 | 1,051 | 139,809 | 42,850 | 38,731 | 32,645 | 25,369 | ..... | 214 |
| 101,951 | 100,609 | 95,214 | 9,273 | 319,412 | 97,014 | 88,907 | 77,918 | 55,390 | ..... | 183 |
| 55,614 | 55,746 | 51,561 | 3,373 | 158,543 | 48,899 | 42,562 | 37,866 | 29,184 | ..... | 32 |
| 74,490 | 73,404 | 68,722 | 7,092 | 216,488 | 66,810 | 57,415 | 50,576 | 40,563 | ..... | 1,124 |
| 82,178 | 79,713 | 77,965 | 4,079 | 235,471 | 71,076 | 63,760 | 56,720 | 42,618 | 109 | 1,188 |
| 38,936 | 40,266 | 37,935 | 983 | 127,257 | 36,855 | 34,556 | 30,910 | 24,724 | ..... | 212 |
| 810,497 | 784,195 | 745,922 | 89,111 | 2,666,008 | 750,461 | 720,611 | 643,383 | 505,012 | 411 | 46,130 |
| 4,451 | 3,859 | 3,574 | 350 | 10,789 | 3,368 | 2,957 | 2,551 | 1,902 | ..... | 11 |
| 29,012 | 28,438 | 27,055 | 2,094 | 93,063 | 26,709 | 25,094 | 22,911 | 17,728 | 317 | 304 |
| 299,600 | 291,000 | 280,300 | 45,000 | 1,036,100 | 284,900 | 276,100 | 239,600 | 198,500 | ..... | 37,000 |
| 35,615 | 34,924 | 32,903 | 4,229 | 121,387 | 33,342 | 32,464 | 30,572 | 23,544 | 33 | 1,432 |
| 12,209 | 11,218 | 10,771 | 821 | 41,293 | 10,824 | 10,592 | 10,310 | 8,753 | ..... | 814 |
| 14,550 | 14,050 | 13,547 | 594 | 50,235 | 13,911 | 13,456 | 12,926 | 9,804 | ..... | 138 |
| 13,380 | 13,402 | 12,786 | 357 | 44,680 | 12,523 | 12,034 | 11,228 | 8,858 | 7 | 30 |
| 6,967 | 6,698 | 6,389 | 896 | 22,271 | 6,420 | 6,118 | 5,539 | 4,015 | ..... | 179 |
| 21,069 | 20,391 | 19,274 | 1,938 | 67,268 | 19,476 | 18,988 | 16,797 | 12,007 | ..... | ..... |
| 47,919 | 47,136 | 46,405 | 825 | 164,872 | 46,610 | 46,970 | 39,767 | 31,525 | ..... | ..... |
| 36,098 | 34,380 | 33,332 | 1,827 | 129,690 | 34,311 | 34,044 | 34,383 | 26,543 | ..... | 409 |
| 205,524 | 197,863 | 181,331 | 20,083 | 585,683 | 179,193 | 162,504 | 139,995 | 103,991 | ..... | ..... |
| 22,168 | 21,014 | 19,799 | 1,077 | 71,264 | 18,916 | 19,162 | 19,088 | 13,607 | 8 | 483 |
| 54,928 | 53,077 | 51,767 | 8,557 | 205,195 | 53,117 | 53,500 | 52,996 | 40,206 | 46 | 5,330 |
| 7,007 | 6,745 | 6,689 | 463 | 22,218 | 6,841 | 6,628 | 4,720 | 4,029 | ..... | ..... |
| 761 | 532 | 388 | ..... | 1,493 | 371 | 503 | 411 | 166 | 42 | ..... |
| 951 | 970 | 924 | 111 | 3,623 | 952 | 927 | 912 | 755 | ..... | 77 |
| 1,356 | 1,145 | 1,181 | 157 | 3,942 | 1,150 | 1,213 | 907 | 659 | ..... | 13 |
| 50,018 | 48,463 | 42,073 | 649 | 115,027 | 35,676 | 33,101 | 26,928 | 19,322 | ..... | ..... |
| 687 | 735 | 678 | 50 | 1,421 | 524 | 348 | 302 | 247 | ..... | ..... |

# Educating Deaf Children

S. RICHARD SILVERMAN

*The two articles below, by Dr. Silverman and Dr. Elstad, have been adapted from addresses they made to the International Congress on Education of the Deaf, which was convened at Gallaudet College in Washington, D.C., June 22–28.*

*Approximately 2,200 persons from every State in the Union and more than 50 foreign countries attended the congress. The majority were educators, but some were specialists from such allied fields as linguistics, physiology, and sociology.*

*During their week-long meeting the delegates had an opportunity to see exhibits and demonstrations of new equipment and materials, to see deaf children demonstrate their accomplishments, and to hear discussions on a variety of subjects—more than 250 papers were read. A number of papers reported on research being conducted; for example, Bernard Tervoort of the Netherlands described his efforts to determine how deaf children communicate with each other outside the classroom; Denis Fry, professor of experimental phonetics at University College, London, described his work on how sound and the brain interact in communication; and Edgar F. Waldon of the Speech Clinic, The Catholic University of America, described a new audiometric technique for testing hearing.*

*Other speakers discussed their problems and their experiences in working with the deaf. Secretary of Health, Education, and Welfare, Anthony J. Celebrezze, who was a banquet speaker, talked about the overwhelming importance of providing good teachers for deaf children and the contributions of Federal aid programs to the education of the deaf.*

FOR DEAF children the essential and primary channel for receiving the acoustic symbols that we call speech is either absent or severely restricted, and all the skills of communication that depend on learning over this channel are adversely affected. In other words, there is a complete or partial roadblock to acoustic events somewhere in the auditory system.

The task of educating the deaf child begins, therefore, with a thorough description of the nature and severity of his impediment. We soon realize that the major effect of the roadblock is to prevent the normal development of communication. And we know that if the child is to learn, he must communicate in some way. We must, in a sense, search for a model of communication appropriate for the child with a hearing loss. We must seek ways to manipulate information so that it can be transmitted to him over whatever sensory system or combination of systems can handle it. At the same time we are concerned about the content of what we communicate as it is influenced by the demands of society and of the child himself.

The sessions of the Congress follow a sequence that proceeds logically from description and assessment of deaf children through their educational experiences to their economic, psychological, and social accommodation to the world about them: from otologic, audiologic, psychologic, and educational assessment, through expressive and receptive communication, including speech, speech-reading, hearing and manual methods, to learning that involves language, reading, concept formation, and the content of the curriculum including vocational preparation. Finally, we deal with organization and administration that may be appropriate to implementing our ideas and knowledge.

Although our primary concern is the education of deaf children, we have earnestly solicited participation from such fields as audiology, genetics, general education, linguistics, otology, pediatrics, physics, physiology, psychology, public health, sociology, and rehabilitation.

As I have said, we begin with the assessment of children. Three factors, among others, have had a substantial impact on the advancement of otologic and audiologic assessment: the evolution of modern middle ear surgery, the development of refined measuring instruments (audiometers), and the intelligent application of principles and techniques of measurement.

The details of surgical method are better told elsewhere and by others. Important for us is the stimulation given by surgical developments to the search for methods of assessing the suitability of patients for operation, of predicting success, and of measuring results. The need, for example, to differentiate between conductive and sensory-neural pathology stimulated the study of speech audiometry which is applicable to the audiologic assessment of children.

The development during the past generation of a variety of audiometers and associated instruments constitutes the major audiologic breakthrough of our time. Without these instruments, there would be no audiology. The encouragement of early detection and improved description and classification of hearing loss has been a fortunate consequence of the development of modern audiologic assessment.

The time-honored approach to the psychological and educational assessment of deaf children has been to compare their performance with that of hearing children on tests designed

*Dr. Silverman, director of the Central Institute for the Deaf and professor of audiology, Washington University, St. Louis, Mo., was cochairman of the Congress.*

for the latter. Evaluation of intelligence, motor ability, social maturity, personality and perceptual skills have generally followed this pattern. Fortunately the diffuse and indiscriminate use of such tests is yielding to more sharply focused testing. For example, we are increasingly concerned about the nature of deafness itself and its effect on the total outlook and behavior of the child and not merely as a cause of inability to communicate verbally. We are interested in the visual perception of deaf children not only because most of them are likely to receive a major proportion of information about the external world by this means, but because deprivation of auditory perception may affect visual perception. And so, such topics as span and fluctuations of perception, grouping of stimuli, influence of context, and precision of perception are relevant to an understanding of the visual tasks confronting deaf children.

Some investigators reject the notion that deaf persons may be described only by some measure of central tendency that is in turn referred to a similar measure for the hearing, and they also reject the stereotypes that this practice creates. Deaf persons, they say, are not an undifferentiated monolithic mass, but each is an individual for whom his personality is as unique as his fingerprints. We are hopeful that the psychologists and psychiatrists who rummage around in the psyche of the deaf persons will soon be able to tell us to what extent, if at all, a distinctive psychology of deafness is a valid concept.

In no situation are we more cautious about the validity of comparing deaf and hearing children than in educational assessment. It is true that a substantial body of us wishes to educate deaf children with hearing children. We may differ as to when, where, and how this is accomplished, but we recognize the need for relating the performance of deaf children to that of hearing children. Nevertheless, the conventional tests do not describe adequately the language and language-related aptitudes, skills, and problems of our children. For that matter, such tests may be woefully inadequate for incisive probing of the language of hearing children.

We know how fundamental language is for our children. But if we are to improve our understanding of how they learn it and consequently of how it should be taught, we need a satisfactory description of language. Investigators and teachers have sought diligently for better descriptions and measures than those yielded by standard tests. They have not been satisfied by vague and frequently misleading assertions about deaf children being "two to five years retarded" or about their having typical "deaf language." They have used such measures as sentence length and complexity, frequency of occurrence of certain parts of speech and word order, extent of vocabulary, type-token ratios, subordination, and abstractions. They have used the methods of structural linguistics to analyze the functional and lexical features of the spoken and written language of deaf children. This is one of the many possible leads to better description of language and to improved techniques of teaching vocabulary, syntactical patterns, and the semantic rules that relate words or sentences to things or events, not to mention the subtle and little understood interweaving of the learning of language and the forming of concepts. Our psychologists are likely to suggest descriptive methods that enlighten us on how a child comprehends and manipulates language by stimuli that require him to recognize, recall, and integrate language.

The vast accumulation of otologic, audiologic, psychologic, and educational ideas, experience, knowledge, and techniques of assessment suggests that satisfactory solutions to the difficult problem of differential diagnosis are at hand. This is not quite the case. Confusion and controversy surround differential diagnosis, particularly of so-called "difficult" or "multiple-handicapped" children. It is difficult for some of us to make the grand and rational synthesis of all the information about a child because we tend, frequently unintentionally, to place primary importance on the use to which our own special brand of experience should be put. And we generate confusion by inappropriate mixing of information. For some, the important item in differential diagnosis is describing such characteristics as differences of anatomy and from them we hear about the brain-injured; for others, it is etiology, and we hear about rubella, etc.; for still others, it is behavior, and we hear about talking, walking, etc.; and for others it is response to therapy, and we hear about a child who must have such and such a disorder because he learns by such and such a method.

We said at the outset that if a child is to learn, he must communicate in some way. However much we may differ among ourselves in the emphasis we place on the teaching of speech to deaf children, we all agree that it must have a prominent place in his education as a fundamental tool of communication. For many of us it is an essential skill for deaf children to cultivate and its study is of commanding interest to us. Students of speech of deaf children have been greatly stimulated by the development of improved tools and methods for investigating speech as an acoustic event. We now have techniques for analyzing and synthesizing speech, for making it available for visible and tactual display, and for manipulating it by selective filtering, frequency transposition, and temporal expansion and compression. These techniques aid our analysis of the perceptual features of speech and guide us in manipulating it for the benefit of children whose range of the perceptual cues of speech is severely limited. Both the design and the use of hearing aids in auditory training are likely to be influenced significantly by the knowledge we acquire about the perception of speech.

Our understanding of the physiological mechanisms of speech should be enriched by the techniques of high-speed photography of the larynx during phonation and of X-ray views of

the articulators in action, by study of speech that is deviant because of such structural pathologies as cleft palate.

The teaching of speech and our results still appear to be affected by our attitudes toward it. Some see speech as a subject to be taught like a foreign language to those who can "benefit" from it, as a "nice" skill to cultivate. They do not recognize that practice and atmosphere are conducive to vitalizing speech for the child. Others see speech as a basic means of communication and hence as a vital mechanism of adjustment to the communicating world about us. They would set the stage for the child everywhere—in the home, on the playground, in the schoolroom—from the moment his deafness is determined so that speech may become purposeful to him at all times. The absence of a "living speech environment" may account for some of the so-called oral failures in our schools for the deaf.

The issue of the relative emphasis that should be placed on each sensory pathway in teaching speech to the deaf is still with us. Some maintain that deaf children more easily learn to speak if the teacher concentrates attention on one sense at a time and deliberately excludes other senses. Others believe that the senses should reinforce each other. We look forward to accumulating results of experiments that combine listening with seeing and speechreading with the use of a tactual vocoder.

The search for aids to teaching goes on vigorously; for example, for an orthographic system that would carry information about speech unambiguously and would at the same time be perceptually simple, and for the fundamental unit—phoneme, syllable, word, or phrase—most suitable for the structured teaching of speech.

Certainly, we will concern ourselves with the evaluation of the speech of deaf children. By evaluation of speech, I mean not just its intelligibility but its practical long-range social usefulness. We have come to learn that intelligibility and social usefulness are not always linearly related, that the attitudes of talker and listener having to do with confidence, encouragement, frustration, and motivation all affect the use a deaf person makes of his speech.

When we turn to speechreading, we can make rather reliable judgments about who is a good, bad, or indifferent speechreader. Ingenious attempts have been made to relate intelligence, educational achievement, hearing loss, time of onset of deafness, linguistic and perceptual skills, and personality to these judgments. Although there are promising leads here and there and the value of speechreading as a complementary element in bisensory communication is being demonstrated, the failure of a clean pattern of relationships to emerge continues to frustrate us. This may be so because definitive measures of speechreading skill and aptitude still elude use.

The massive fund of knowledge about hearing and the evolution of hearing aids and electroacoustic instruments and methods has caused us to be hopeful about transmitting the important features of speech over severely restricted auditory channels. Yet the maximum exploitation of those possibilities is still limited by our incomplete knowledge of normal and abnormal hearing. We still search for incontrovertible laws that govern the encoding of information by the ear for transmission to the central nervous system. And we are curious about the function of efferent tracts that lead to the sense organ.

Here, too, a variety of tools and methods are available to us. Among them are psychoacoustic techniques previously mentioned, mathematical and mechanical models, chemical analysis of the intracochlear fluids, electrical recording of responses to sound, frequently in association with artificially created pathology by local injury, toxic substances, noise and ablation, and the electron microscope that now enables us to penetrate a single hair cell. Despite the dramatic publicity given to the possibility of transmission of speech by direct stimulation of the auditory nerve there is no evidence that it is now in sight.

The amount of literature on the subject of manual forms of communication reveals an intense evangelism both for and against them. There is a growing urge, however, to study objectively and rigorously the contribution of manual forms of communication to academic and social efficiency. We look forward to results of investigations that associate the manual alphabet with the teaching of speech and language and to continuing analyses of the linguistic features of early gesture and of formal signs.

Earlier I referred to the learning of language. We are all aware that the expression and comprehension of language, the stuff of communication, is the keystone of our curriculum. In the long run our ingenuity as teachers of language will determine how successful we are in teaching such concepts as time and space in science, social forces in history, or the relation of computation to the complex language of arithmetic. Nor should we underestimate the need for equivalent ingenuity in teaching aesthetics, physical and health education, home economics, religion, and arts and crafts. Perhaps the newer methods of teaching reading, arithmetic, science, and foreign languages to hearing children, including the use of programed instruction, have possibilities for deaf children.

In the final analysis, how we educate any child depends on the outlook we have for him. This outlook may be determined by our own value system, by our experience with postschool accommodation and adjustment of deaf persons, by our own education and indoctrination, by our professional training, by our relation to deaf persons, or by some combination of these. I believe that a major source of the controversy about how deaf children shall be educated is the difference in outlook we have for deaf persons. Some would gear an educational program to the production of contented members of a subculture secure in its mores, its sanctions, its

modes of communication, and its opportunities for social expression. Others reject the validity of the complex assimilation in the world of the hearing. Still others recognize the possibility of constructive combination of both ideas and attempt to maintain flexibility.

Obviously these attitudes influence not only means of communication in the classroom and the content and nature of the curriculum but also the organizational and administrative arrangements, day or residential, integrated or segregated, age at which instruction begins, that we make for deaf children and the essential practice of guiding and counseling parents. Convincing evidence about these matters is discouragingly meager. We tend to regale our opponents with anecdotes drawn from extreme ends of a statistical distribution about their "failures" and our "successes." However, it is neither necessary nor desirable for this Congress to generate uniformity in attitudes and practices in the education of deaf children.

As teachers of children with severe disorders of communication, we recognize that in any economy our students may find their economic opportunities limited. The burgeoning technology compounds our problem and underlines our responsibility. The old panacea, "Give them vocational training," will no longer do. Vocational training for what? Educators are faced with the perplexing problem of preparing young people for jobs that at the time of their schooling do not yet exist, or for specific vocations that may have ceased to exist by the time the students are graduated or have been employed for a short time.

These are not fanciful and theoretical issues. I come in contact with them almost daily, as I am sure others do. Fortunately, government and private agencies are cognizant of the problems and are seeking solutions.

Final and complete solutions are not yet in sight, but one principle, I believe, is becoming increasingly clear. We must equip young people with those fundamental skills that enable them to acquire new skills when the situation demands that they do so. They must be prepared to accommodate to change. For educators of the deaf, this means that we must renew and reinvigorate our effort to minimize the obstacle of inferior communication that may block the path to vocational success. Knowledgeable people have suggested that we must extend the period of time over which we stress such skills as reading, language usage, and mathematics, and not replace them with premature and

### Federal programs for the deaf

The Government's interest in the welfare of the deaf dates back to 1864, when Gallaudet College was chartered. Over the years since then the Government has contributed to a number of programs that benefit the deaf; for example, the programs in the U.S. Department of Health, Education, and Welfare conducted by the Vocational Rehabilitation Administration, the Public Health Service, and the Office of Education. Two, however, are fairly new programs, and both are administered by the Office of Education. They are the Captioned Films for the Deaf Program (P.L. 85–905) and the grants-in-aid program for the preparation of teachers of the deaf (87–276).

Under the Captioned Films program, the Office obtains films from various sources, captions them, and distributes them on loan. The program began operating in 1959 with 29 prints, a gift from the American School for the Deaf, and an annual appropriation of $85,000. Today the program has a library of 240 general interest or recreational films, 122 documentary and educational films, and 140 filmstrips. On the average it is running 400 recreational shows a month and is serving 825 groups of deaf people—school, church, social, and other groups.

In 1962 the Congress extended the authority of the program to include research and production, and increased its appropriation for fiscal year 1963 to $595,000 (P.L. 87–715). For fiscal year 1964 the Congress has appropriated $1.5 million. Under the new authority and with increased funds the program has branched out.

It is conducting two research studies: under contract with the National Education Association it is investigating the use of visual aids in improving the language of the deaf; and under contract with the American School for the Deaf, it is developing audiovisual aids for use in the auditory training for children with impaired hearing.

It is producing a weekly filmstrip, which is made especially for deaf children and which parallels **My Weekly Reader**, a paper for hearing children. Responses from the 250 schools using the filmstrip have been enthusiastic.

It has adapted a vocational training film on IBM keypunch operation for use with the deaf.

It is planning to set up 50 new distribution centers for educational films in schools, which handle the work at no cost to the government; and 2 centers for recreational films.

By the end of fiscal year 1964, the Captioned Films program expects to have 46,000 items in its library, according to John A. Gough, acting director of the Educational Media Branch, which handles the program.

The program for the preparation of teachers of the deaf was established in 1961 with an appropriation of $1.5 million for fiscal years 1962 and 1963 to be used to relieve the severe shortage of classroom teachers in schools or classes for deaf children. The program provides for grants-in-aid to graduate students, undergraduate seniors, and institutions that improve or establish new training programs.

Already the program has a good record of accomplishment:

938 scholarships have been awarded by the 48 colleges and universities participating in the program.

370 of the 470 students who were graduated from teacher preparation centers in the spring were scholarship students. The total number of graduates more than doubled the number in any previous year.

The number of persons training in this field since 1961 has more than doubled as a direct result of the legislation, and the number of training centers has increased from 31 to 50.

The program has benefited the education of the deaf in other ways, not so easily measured, Ralph L. Hoag, Office specialist in the education of the deaf, says. And he points to increased interest of educators and laymen in making better provision for deaf children.

poorly conceived "vocational training." Our people must learn to learn.

Education is teachers. All of our ideas, knowledge, and skills are like chaff which the wind driveth away if we do not have properly qualified teachers and enough of them. Here in the United States we are heartened by the recognition of our Federal Government of the need for more and better teachers. I am hopeful that its generous support through the Office of Education will stimulate us to scrutinize our activities critically and objectively. I predict that this Congress will cause us to examine our programs with regard to selection of students, level and length of preparation, curriculum, practice teaching, and the organizational and administrative context of the program.

We share a justifiable pride in our professional past, and we hope that this Congress will be the prologue to an even more productive and satisfying future. It will if we realize that our attainments fall far short of what is possible. We can close this gap by improving the quality of teacher training, by reducing our teacher shortage, by eliminating a persistent parochialism that is a residue from the days when the education of the deaf was in the hands of a dedicated but professionally inbred few, by communicating information to the public objectively, by applying and increasing scientific knowledge, and by ennobling the legacy of commitment that characterized the early few.

I trust that among us there is the urge to meet the complex problems of our calling with wisdom and with vigor to the end that we shall wear its mantle with dignity and that we shall be worthy of its challenge.

# Broadening Our Educational Horizons for the Deaf

LEONARD M. ELSTAD

DOWN THROUGH THE YEARS miracles have been happening daily in thousands of classrooms in many nations. Deaf children have entered school with little, if any, of the usual factual information hearing children acquire so easily during the preschool years because they can hear. Slowly educators have recognized deaf children's possibilities for learning, and they have achieved successes, often spectacular successes.

Ideas have been exchanged, educational programs have been enriched, and some teacher exchanges made.

Organizations of teachers have shared experiences and have joined forces to build a stronger support from an ever-increasing membership. Evidence of such a union of forces is represented in the Council on Education of the Deaf, host to this congress. The three groups in the Council have retained their identities and yet have come together on programs that can be jointly profitable to the education of deaf children. It is hoped that some day there will be an International Organization of Teachers of the Deaf; surely it would broaden our horizons.

Governments continue to show an increased interest in handicapped persons. Gallaudet College, although a private corporation, is financially aided by the U.S. Government. Without this generous support the program would be greatly reduced.

In the U.S. Department of Health, Education, and Welfare, the Vocational Rehabilitation Administration has rendered outstanding support to handicapped persons, and the Office of Education has encouraged teacher training programs and captioned-films programs for the deaf. These and other Federal agencies are represented on the program. The various State and Provincial governments in the United States and Canada have also provided generously to improve school programs for the deaf. Private and parochial schools have flourished. All these educational efforts are a part of the broadening of our horizons.

What is yet to be done to broaden our educational horizons? We must begin in the early years. We know how much is lost educationally in the early life of the deaf child. We need to increase our educational efforts during these years, although much fine work has been done in the early preschool years. These are the key years. If we hope to hold our young people in school and to create in them a desire for a higher educational experience, we must find a way to get them started early in life; otherwise the stronger urges to get out on a job, to buy that car, and to marry will overcome the desire for a higher education.

Today, in this country, there is need for higher education along technical lines in addition to the liberal arts education available at Gallaudet College and in colleges for hearing students. Without the equivalent of at least a high school education, the chances for employment are greatly reduced for hearing young people. How much more this is true of our deaf and hard-of-hearing youth!

The applications we receive at Gallaudet College from deaf persons in other nations indicate a desire for more educational opportunities. Our experiences with students from Finland, China, South Viet Nam, Japan, India, Pakistan, Ghana, and South Africa lead us to hope that more opportunities for higher education will be available soon in other lands. Evidence indicates that deaf people have the same native intelligence and intellectual potential as

*Dr. Elstad is president of Gallaudet College, and cochairman of the congress.*

people with normal hearing. In this country we know that 50 percent of the high school graduates with normal hearing go on to higher education. Shouldn't more than the 10 percent we now have going on to higher education from schools for the deaf be raised substantially, and soon? Here a broadening of our horizons is possible and desirable.

To keep up with automation, we must be alert to what the deaf person can do about it. The deaf person has proved himself suited to the field of automatic data processing. Mathematics-minded students will do well at programing, if given the opportunity.

Research is beginning to open up in a field for the deaf in space travel. Work in the U.S. School of Aviation Medicine at Pensacola, Florida, reveals the suitability of certain deaf persons for use as space men because weightlessness and motion have little effect on their nervous systems. We would do well to keep abreast of all such interesting developments.

Communication of ideas continues to hold the attention of all who work with deaf children. How can we best get ideas across to our children? The best means of communication to use in the classroom, on the playground, and socially is still a burning question. If the use of the manual method of communication has value, when should it be initiated in the school program? We must dare to experiment. Some schools here and abroad are experimenting.

The hearing aid will be of greater help as research continues to explore greater possibilities of its use.

When will we find better ways to improve the speech-reading abilities of our deaf children? Such training can be improved through the use of filmed lipreading lessons, where the student can advance at his own pace.

Captioned films are now becoming available so that this reservoir of recorded visual learning can be utilized to a greater extent. Special films will be produced so that the eyes can be of increased assistance in learning. Even though we must depend so much on the eyes, we do not make the maximum use of this sense in the educational process. Lighting and classroom seating have only recently been improved. If the deaf child cannot see as well as his eyes permit him to, he is being deprived of a large part of his educational potential.

The increasing interest of linguists, philosophers, and teachers in the language of signs and new emphasis on scientific language study, on new mathematics and science teaching, as well as on the structure of meaning is rapidly narrowing the communications gap between the educated deaf and hearing community.

One staff member just recently pointed out that the almost explosive increases in new medical knowledge—the lowering of infant mortality rate, development of new antibiotics and vaccines, virtual elimination of epidemics, new surgical techniques, progress in anesthesia, and use of blood and blood derivatives—had resulted in the improvement of health standards and an increase in life expectancy for most countries of the world. These advances, he said, along with advances in the use of radioactive isotopes, molecular analysis and electronic measurements, microscopy, microchemistry, tissue culture, and transplants, should lead us to undreamed-of medical heights in the future. And inherent in all this progress is the potential elimination of many of the causes of deafness as well as the potential restoration of hearing to many through advanced surgical research in the transplanting of human tissue, including nerves.

The realization of such possibilities has led to a significant increase in medical research in the hearing field. For instance, just a dozen years ago the budget for speech and hearing research at the National Institute of Neurological Diseases and Blindness was approximately $25,000 a year. In 1962 that Institute's expenditures for hearing research alone exceeded $3 million. The projections show significant increases. An encouraging beginning has been made, and it is anticipated that the intensification and acceleration in research in hearing, combined with an increase in the number of well-trained researchers, will provide significant clinical and preventive rewards in the future.

Our Counseling Center here at Gallaudet College forsees a bright future: Most residential schools will have a psychological counseling program for students, parents, teachers, houseparents, and officials of agencies. The Counseling Center for the Deaf will continue to train professional personnel to fill these positions. Regional psychological agencies for the deaf will be established. Increased emphasis will be placed on research and development of specialized clinical procedures by the Counseling Center for the Deaf, and the findings will be shared with the new centers through publications and professional media and formal and informal meetings. Eventually there will be a formal organization of psychologists working with the deaf. The quality of professional personnel attracted to the field will continue to rise. The Center's type of program of services, research, and graduate training will be established in other countries.

WE ARE concerned about the community life of the deaf citizen. Studies are being made of the status of the deaf citizen in his home and in his community. This is good. We can better prepare deaf students for living if we know how life is lived when a hearing loss is a consideration. We cannot take things for granted. Those who teach deaf children should and must know the deaf adult. Industry goes to great lengths to test its product on the job and is constantly making refinements and improvements. Should we be less interested in the functioning of the deaf members of our population when they become full-grown citizens? Can we improve what we do for them and with them so that they can be a more potent part of complex community living? I think we can.

# A Positive View of Aging Asks Much of Education

HALBERT L. DUNN

FOR SEVERAL YEARS we have been talking about education for aging. In the growing proportion of old people in our population we have seen a growing challenge to education; and for the last several years we have joined in conferences again and again to consider what we can do to help make old age a productive and stimulating time in every man's life.

## Our ideas at fault

Our interest is genuine, our motives are worthy, and despite the meager resources we have had for attacking the problem, our progress has been considerable. But our progress could have been greater; and I am convinced that we have been hindered not so much by lack of resources as by our own ideas about old age and what education for it should be.

After attending two White House conferences on aging and many more regional and State conferences on the same subject, I am convinced that it is time for us to stop thinking about education for aging and start thinking about education for maturity—not for a maturity that passively awaits and accepts solutions to problems, but for a maturity that is active and stimulates action, a maturity that is, in effect, *dynamic*. Dynamic maturity—this should be our overriding goal in what we have too long called "education for aging."

---

*Halbert L. Dunn, M.D., is consultant on aging to the Adult Education Branch of the Office of Education. For 25 years he was chief of the Office of Vital Statistics in the Public Health Service and subsequently, for 1 year, was assistant on aging for the Service.*

Aging should be understood and valued for what it is—an integral part of living and maturing. Aging is coordinate with growth, yet most people dread aging and think of it as something akin to sickness. People yearn to reach full maturity—they do so particularly in their older years, when they are more and more inclined to ask themselves whether life has been worth the living—but they cannot reach maturity without aging.

The aging process affects the body rather than the mind and spirit. To be sure, as tissues age, the brain also deteriorates and learning becomes more difficult and somewhat slower. But the mind can keep on growing even while the body weakens. This means, of course, that if men and women are to enjoy dynamic maturity in their older years they must begin in middle life to transfer their interests from activities that make large demands on energy, to activities that can be pursued with vigor even though the body is feeble. Increasingly they must seek self-fulfillment through activities that give satisfaction to the mind and spirit rather than to the body.

In our customary approach to the problems of aging we have given education a role to play, but we have usually thought of this role as supportive rather than primary. We have concerned ourselves chiefly about such matters as welfare and medical care, about housing, income, and vocational rehabilitation, about recreation and activities to fill the leisure hours. Admittedly these are basic and urgent needs, and they must be met; but if we end with these we have not even begun.

When education for aging is transformed into education for dynamic maturity, education will play a *major* role, and a high premium will be placed on educational leadership. Motivated by this new emphasis, we will direct our attention not toward breakdown and sickness but toward well-being. *Well-being:* I use this word to mean more than freedom from sickness, more than a passive type of good health. I use it to mean a state in which a person feels the creative joy of going forward, of fulfilling himself, of living a life of social usefulness. I use it to mean a state of balance—physical, mental, and spiritual balance—in which the person operates as an integrated whole in his efforts to realize his full potential within the environment in which he finds himself.

There are degrees of well-being: Every person has times of feeling "more well" than at other times, and most persons spend most of their time somewhere between the extremes in the range of well-being. But a continuously high level is possible, and this level is our desideratum for the older years; the man who does not reach it is not likely to achieve the dynamic maturity he yearns for.

Well-being in this sense is in fact so essential to dynamic maturity that the two cannot be considered apart from each other; and we may as well say that to educate any person for dynamic maturity is to direct him, from his childhood on, toward a high level of well-being. If a person lives always on a high level, he is the while maturing dynamically: he cannot help himself. And when at last he is entitled by his years to claim old age he will find himself the possessor, instead, of dynamic maturity.

But, the reader may ask, how can anything as intangible as well-being be taught? How can it be brought into the realm of education?

Part of the answer—the less difficult part—is that not all of the components of well-being *are* intangible. Many are in fact so tangible that they can be stated as simple rules of health and are part of any good program of

health education. How to care for the body, how to follow the principles of good nutrition, exercise, and rest—these can be made part of the school's curriculum. And the school can provide its pupils with a program that encourages and develops wholesome recreational interests.

## Balance—the goal of education

But the rest of the answer is not easy, for dynamic maturity does have intangible components—components such as love and altruism, integrity, and a sense of responsibility—and they are the ones that pose the greater challenge to education. These intangibles are teachable, but only as they are made tangible through example and experience. Well-being is a dynamic, forward-moving state; and the person who would live in it with comfort and delight until the end of his days must first learn to maintain his balance—balance not only within himself, which is essential to his good health both physical and mental, but also between himself and society. The task of education, therefore, is to teach each person how to catch his balance and, once having caught it, to keep it, even in a world changing with a speed that threatens balance, both for society as a whole and for the individual person.

The balance essential for dynamic maturity is complex. It has at least six major components: Chemical balance, neuromuscular balance, balance between the inner and outer world, balance between the individual and society, balance between mind and body, and balance between exertion and rest or leisure. Here are clues to the task of education as it continues into the life of the adult: It must be closely linked to education for health, particularly mental health. Man must become intelligent about the vast complexities of his body and his nature, for only if he understands the various types of balance that are involved, knows why they are important to him, and knows to what extent he can use his intelligence and his will to secure them for himself, will he be able to reach the peaks which he was born to scale.

A review, however brief, of the six components of balance will at least suggest a few of the possibilities for education in this whole matter of balance and its relation to physical and mental well-being, and to the ultimate goal—dynamic maturity.

*Chemical balance.* Each human being is a cellular commonwealth which, if he is healthy, always maintains within itself a delicate chemical balance called homeostasis. It involves both the inner working of each cell and the interrelationships among cells. No person can enjoy well-being unless the cells of his body receive what they need to function well and to maintain a smooth working relationship with each other. This type of balance is itself complex. It is affected not only by (1) the chemistry of the cells but by (2) the distribution of the body fluid, which bathes the cells and furnishes them with the materials they need, (3) the interaction by the hormones secreted by the ductless glands, and (4) the bioelectrical forces of the body.

1. Each cell, microscopic though it is, is a vast and complex molecular organization. It is walled in by a

When men and women engage in art—in any form of creative activity—their minds and spirits grow and develop and reinforce their aging bodies. (The photographs are by Bo Boustedt, Swedish architect; the originals, in full color, are reproduced in a booklet, "Homes for the Aged in Sweden Offer Ideas for Americans," published last year by the President's Council on Aging.)

semipermeable membrane and contains a fluid substance called protoplasm, which is made up of the nucleus, which is at the center, and the cytoplasm around it. The cell contains millions of protein molecules (enzymes), the chemical tools of metabolism, which are kept in ordered array by a delicate cytoskeleton. Mitochondria dot the protoplasm; they are extraordinarily efficient metabolic factories, capable of transforming oxygen and food substances into the various types of energy needed by the body. The nucleus sends out genetic messages to set the patterns by which the many types of enzymes are made and to guide the cell in selecting, from the body fluid around it, the chemical materials it needs for carrying out its responsibilities.

The entire molecular world of the cell must be maintained in chemical equilibrium, or the cell will die. Threats to this equilibrium come from all sides, for many dangerous forms of energy are constantly being released in the environment. Radiation, for example, whether from X-rays, atomic fallout, or cosmic rays from outer space; poisons such as smog, insecticides, and certain drugs—all these injure and usually destroy the cells they penetrate. The disastrous effect of thalidomide on fetal development, discovered in 1962 when thousands of armless and legless infants were born, is a tragic illustration of what the environment can do to cellular balance.

2. Although man lives on land and breathes air, the cells of his body are aquatic organizations. Each cell has an outer and an inner world, and both contain fluid; that they do so is probably reminiscent of the time when all life was aquatic. As life emerged from the seas it may have found that it still needed the environment of the seas and therefore retained something of that environment in the form of body fluid.

Many things can upset the balance of body fluid—the heat of summer, certain foods, certain diseases, loss of blood. The body struggles unceasingly to maintain this balance, both to keep the fluid properly distributed and to keep it at the right consistency. The equilibrium between acid and alkali, for instance, teeter-totters on a knife's edge: If the body becomes too acid, the lungs have to exhale more carbon dioxide than usual to right the balance.

3. Much of the wisdom of the body is applied through an interlocking directorate of hormones. Hormones are in the secretions poured into the bloodstream by the so-called ductless glands—the adrenal, pituitary, thyroid, parathyroid, pineal, and thymus glands—and others, the sex hormones, come from the ovary in the female and the testis in the male.

The work of these hormones is part of the body's control over the chemical processes within the cells and is responsible for a chemical type of communication throughout the cellular commonwealth. Adrenalin, for instance, which pours into a person's bloodstream whenever he is aware that danger threatens, moves the entire body into high gear.

4. The living cell is a miniature battery. The cell membrane, which is made up of polarized molecules, is selective for potassium and sodium ions. Differences between these ions result in approximately a 70-millivolt potential between the outside and inner surfaces of the cell. When something happens to release this potential, the cell immediately—within a thousandth of a second—performs its function and recovers the proper potential. Dead cells have no such bioelectrical balance. Life itself depends upon its being maintained.

Many things affect bioelectrical balance. A particular enzyme within the cell, for instance, is capable of depolarizing the membrane and releasing the bioelectrical potential; certain poisons destroy this enzyme. Changes in the atmosphere can affect the balance to such an extent that they affect a person's moods: The negative ionization produced by a coming storm usually exhilarates a person; a positive ionization depresses him.

We do not yet know much about the part the bioelectrical forces of the body have in controlling the cellular commonwealth, but we suspect that they have a great deal to do with self-integration. They may well be behind the increased effectiveness of the body when it is under the impetus of strong purpose—as, for example, when it undergoes a faith cure. And they may also be closely related to the phenomenon of extrasensory perception. Certainly they are in integral part of various physiological needs—such as the need for sleep, rest, and recreation.

THE OLDER A PERSON GROWS, the more vulnerable he becomes to chemical unbalance. If he understands what circumstances and conditions are likely to upset chemical balance and *why*, he is in a good position to bring these under control—at least the ones he *can* control. Others, if he cannot control or avoid them, will be less upsetting, from an emotional standpoint if from no other, if he understands the effects they are having. Not only does a person need health education, to make him aware of the hazards in his environment and able, somehow, to cope with them, but he needs a never-ending education that will make him constantly aware of the interests, goals, and attitudes that are consistent with the requirements of body and mind for well-being.

*Neuromuscular balance.* The neuromuscular system integrates the parts of the body and holds the body together. It provides the principal channels for inner communication. Motility depends on it. It redistributes the resources of the body to meet the stresses and strains of each day. It has a part in the problem-solving activities of body and mind. Above all, it is the equalizer of physical and mental energies and welds them into an integrated whole.

One part of the neuromuscular system is under voluntary control; the other is under involuntary, or autonomic, control. When control of

the body does not require the attention of the mind, the controls are switched to the involuntary part of the system, to free the mind from the humdrum task of managing routine body functions.

The autonomic system is subdivided further into the sympathetic and parasympathetic systems. The parasympathetic system provides the maintenance crew for such routine functions as digestion, breathing, and circulation of the blood. The sympathetic system takes control when emergencies arise.

*Balance between inner and outer worlds.* Each person lives in both an inner and an outer world. The inner world is the cellular commonwealth; the outer, the physical and social environment. Balance between the two requires communication between them; and communication requires the open channels that accompany physical and mental health.

The body must continually absorb energy from the outer world. The ports of entry—in particular the digestive and respiratory systems—must be kept functioning as well as possible. And the ports of exit for waste energy—the intestinal tract, the kidneys, and the sweat glands—must be kept open.

The sensory ports of entry—eyes, ears, and other sense organs—must also be kept open. They are essential for bringing information from the outer world into the inside, where it is stored both in the mind and in the tissues of the body. Mind and body organize this information, try it out, and reorganize it until it becomes the "perceptive form world" by which each person runs his life.

Communication, or balance, between the inner and outer worlds require open channels of communication. Frequently these channels become clogged. Hate, prejudice, and fixed ideas make it almost impossible for the mind to solve problems correctly. And, as the years go by, the intake ports for information begin to close down.

*Balance between the individual and society.* Keeping the body together as an organized whole requires more, however, than all the kinds of balance I have mentioned so far. The ideas and principles and standards held by the family, the community, and society have much to do with it. No person can live unto himself and enjoy well-being.

If man is to reach dynamic maturity, he must begin early to emphasize certain virtues and activities that, unfortunately, rank rather low in value in modern society. I mean, in other words, that he must begin early to express himself creatively, to practice altruism, and to expend his efforts to contribute something worthwhile to human culture.

Creativity is as important as it is simply because every person is unique. In a world that lays heavy emphasis on conformity, the individual member of society can usually find a counterbalance to the pressures of conformity in expressing his uniqueness in some form of creative activity.

The practice of altruism is important because love is important. Each person needs love at all stages of his life: Without love, he is isolated; without love he suffers the emptiness of loneliness. The practice of altruism—the giving of oneself to others without expectation of personal gain—is the surest way of obtaining love from others and is the best antidote for the loss of love that most persons must learn to face as they grow older.

And each person must strive to add something of value to the cultural inheritance he himself has received at birth. He must begin early in life to understand and respect this culture, and to recognize his responsibility for enriching it in some way so that generations coming after him will receive a heritage that is better because he lived. Any man who fulfills this obligation finds, as he does so, a great measure of self-fulfillment.

The person is rare indeed who can fully achieve balance unless his social matrix is favorable to well-being. Nearly everyone starts his life surrounded by mother love, and from this secure base he enters the adult world step by step. Throughout his life, whenever sickness or incapacity falls upon him, he is inclined to retreat into the protected state he enjoyed when he was young; his innate desire for the security to be found in a family or among friends explains why the old person particularly needs a friendly community. His body is slowing down, but he can still live to the full; and if he is to do so, his community must contain within itself a therapeutic element.

*Balance between mind and body.* The man who can keep his body and mind integrated so that they work together as a whole has reached the enviable state of self-integration. The energies of his body and mind are in balance, his intuitive thought processes serve him efficiently in the solution of his problems, and his body can expend tremendous amounts of energy without harmful effects. When self-integration cannot be maintained, the body begins to break down; ultimately disintegration takes over.

In a man's older years there are many problems which are difficult to resolve and which are enemies of self-integration. Among them are inadequate income, loneliness, loss of purpose in life, and lack of incentive to live.

*Balance between exertion and rest, between work and leisure.* During his waking hours a person tends to use up energy faster than he can extract it from food and other sources. And he must make a deliberate effort to restore what has been lost, to recharge his batteries, or many of the other types of balance he has achieved will be destroyed.

This is why a person needs rest and sleep every day, to give his energy-burning rate a chance to fall behind the energy-storing rate, so that when he awakens he has a fresh supply of energy to go on.

But sleep is not all that is needed to maintain the stores of energy. The gentle relaxing activities of the leisure hours are equally important. Most of us tend to think of work as only

those tasks by which a man earns his living; but work is any expenditure of energy directed toward a purpose, whether for payment or not. The essence of leisure, on the other hand, is the haphazard expenditure of energy. The concentration that attends work needs to be balanced by the irresponsibility enjoyed in leisure; and this is why play, entertainment, vacation, laughter, indulgence of esthetic interests, and all the other opposites of work are so essential. Effectiveness of both the body and the mind depend on a proper mingling of work and leisure.

No type of balance, however, is achieved once and for all. Balance, no matter what the kind, calls for a continuum of change: In a world that moves as fast as ours no man can keep his balance if he stands still. He must always move forward. His life must always have direction, or purpose.

Purpose comes from many things. It comes in part from the energy systems of the physical universe. It comes from the great force of love, which though it has a biological base reaches ever outward toward the fellowship of man and the oneness of life. It comes from the spirit of freedom without which no social complex is strong, and from imagination as it grows out of personal interests into creative activity. And it comes from an intuitive consciousness that cuts across the disciplines and the systems of human knowledge to enable us to view situations as a whole.

THIS WHOLE MATTER of balance, which is the key to a high level of well-being, is of overwhelming importance to all educators, whether they teach the old or the young. Once society begins to emphasize maturity instead of aging, education will respond. Educators will join forces with colleagues in mental health and public health education, will give more and more attention to the idea that achievement and maintenance of a high level of health and well-being are every man's due. They will be increasingly concerned about the public's understanding of the principles of nutrition and environmental health. They will do more to prepare each person for his struggle against the deterioration of his body and to help him learn how to compensate for the limitations the years may eventually impose on him.

More than ever before, educators will concern themselves with the cultivation of each person's inner resources so that, when he grows old, he will have a treasure to fall back on, particularly if the limitations on his sight and hearing become severe enough to block communication with the world around him. Teachers will become especially aware of the importance of developing creativity in every person, of fostering in him a strong feeling of altruism, a sense of responsibility for the condition of human culture, and lofty ideals about personal relationships. They will be especially eager to help him find a favorable balance between his physical and social environments. And, perhaps most important, they will attack the problem of how to nurture in him a strong sense of purpose that will carry him through his lifetime.

I have several reasons for suggesting that we transform education for aging into education for what I choose to call dynamic maturity:

1. It is much easier to interest young persons in education for dynamic maturity. Aging is too remote and difficult to imagine.

2. Education for maturity is a lifelong process.

3. The processes of aging are so intertwined with the processes of growth and maturation that aging cannot be considered as a thing apart. When education for aging is narrowed into "doing something for older people" it no longer has a goal worthy of the name of education.

4. Emphasis on care and nurture of the body throughout life makes it possible for us to minimize deterioration of the body. To start care after old age has begun is more or less like trying to take good care of the family car after neglect and recklessness have put it into deplorable condition.

5. Development of a person's mind and spirit so that he will have resources to fall back on in old age must be begun when the person is young. Probably nothing is more important than that the young person be encouraged in every way to express himself creatively and to practice altruism.

6. Changing the image of aging—a theme that recurs over and over again at conferences on education for aging—can hardly be done until old people themselves are enthusiastic over the idea of dynamic maturity. To vegetate comfortably in retirement may be the easiest thing to do; but if the old person is to have the love and respect he so greatly needs, he must earn it day by day. He must be loved and respected for what he is—not for what he was. Changing the image of aging, therefore, involves not only society's attitude toward old age and the elderly but the old person's image of himself. He must actively demonstrate that he has something to offer the groups in which he finds himself.

7. The best place to do something for old people is the local community; but the local community will find its responsibility in the matter onerous unless it takes a positive attitude toward aging. The local community provides the best opportunities for leadership and participation, the best place for a preventive program against sickness. Here the several disciplines can coordinate their efforts in friendly cooperation instead of in a tug of jurisdictional strife. Here most older persons can find a demand for their talents and services. Here is the logical place for establishing a therapeutic element that will make it possible for many of the chronically ill, the physically and mentally handicapped to find a life of usefulness. Finally, here is the logical place for the great struggles to transform our present industrial-urban environment into an environment sensitive to the well-being of families and persons.

# AD Minutes Briefly noted--- for the busy School Administrator

*Material for this department is prepared by the staff of the Administration Branch, Division of Elementary and Secondary Education*

**There is a growing evidence that** the equalized value of residential property is a better measure of local ability to finance schools than the total value of all property. The most recent support for this theory comes from a comprehensive study of 104 school districts in Wisconsin and State-aid plans in four other States. The study was made by Leroy Peterson and his associates at the University of Wisconsin and is reported in *The Economic Impact of State Support Models on Educational Finance.*

It may be that consensus is developing on the measure of ability. A number of other persons, all working from different viewpoints, have arrived at the same conclusion as Dr. Peterson and his associates—that the residential property tax base is the best measure of local ability to finance schools. Generally, these authorities cite four reasons for using residential property as the tax base:

★ Residential property measures the willingness of a community to support schools. Since the incidence of residential property taxes falls directly on owners of property, tax receipts from such property more closely measure the willingness of citizens of a community to support schools than total receipts from property taxes do. Owners of industrial and commercial property are likely to shift their tax burden, through higher prices, to the consumers of their goods and services, and therefore the incidence of such taxes falls not only on residents of the community where the property is located but also on persons who come into the community to purchase goods and services.

★ Residential property contributed a large part of the increase in school revenue during the past decade. Currently, more than half of local taxes for schools come from residential property. Taxes on residential property have been very responsive to the needs of schools and to the change in the personal income of communities, while taxes on commercial and industrial property have not.

★ The use of residential property as a tax base helps solve problems of locating commercial and industrial firms. If only residential property is used as a measure of a community's ability to support schools in State grant programs, the effect of property tax rates on location of industrial and commercial property will be lessened.

★ The use of residential property alone as the tax base for local schools simplifies administration of the property tax, for residential property is relatively homogeneous. Industrial and commercial property, which is generally heterogeneous, introduces complexities into tax administration.

A switch to residential property alone need not penalize local schools nor reduce the support of schools by industries and firms: revenue lost to the school districts by the switch would be replaced by the State from funds it obtained through sales and income taxes.

**The Association of School Business Officials (ASBO)** at its annual meeting in Denver, November 3–8, adopted a resolution urging State and Federal officials to resist any action which may lead to excessive control practices. The Association also urged State and Federal lawmakers to confine regulations for use of educational funds to provisions that are required to insure reasonable and proper accountability.

The ASBO action reflects concern of their membership that as more categorical aid is provided local districts from State and Federal levels, there is a corresponding increase in statutory and agency rules and regulations on the control of these funds. Such rules and regulations, they say, restrict officials of local school districts from using funds according to their best judgment.

**School administrators who are** vexed by pressures on the integration issue may soon find some relief in legal decisions. There are indications that an accumulating body of legal decisions may clarify the responsibilities of school districts for promoting integration of school attendance centers. The decisions may make it possible for groups of educators and citizens to cooperate in developing plans for attacking the multitude of underlying community and educational problems rationally.

The U.S. Circuit Court of Appeals in Chicago in a recent decision on a case originating in Gary, Ind. (Bell *v.* School City of Gary, Ind., No. 14152, October 31, 1963), held that school attendance districts based on area, population, walking distance, and similar reasonable criteria are constitutional even though, because of residential segregation, they lead to segregated schools. The issue here is whether a school district has a legal obligation to integrate even when the existing segregation is not deliberate on the part of the school board.

Principals in the Gary case will very likely ask the Supreme Court to re-

view this decision. Whatever the final legal decision, school boards and administrators will be faced, an editorial in the *Des Moines Register* recently pointed out, "with a practical and moral responsibility as difficult to fulfill as any court-ordered transfer plan."

**School boards in several large** cities recently created units to deal with racial issues. In general the boards' objectives appear to be to set up mechanisms through which they can open up channels of intergroup communication and cope with racial issues unhampered by past decisions and commitments. Specifically, however, the jobs of these units will vary from city to city. In Cleveland, the board of education, encouraged by a request from the city's United Freedom Movement, has established a human relations committee to foster meaningful integration. In Los Angeles the board has established an office of urban affairs to deal directly with racial issues, school dropouts, and cases of alleged discrimination against employees or students who are members of minority groups. In New York City, the board intends to establish a human relations committee in the districts of each of the 25 field assistant superintendents as part of its plan to reinforce the efforts to integrate schools. These committees will supplement the work of the existing systemwide human relations unit.

**Detroit Public Schools have tried** out the new primers prepared especially for city children from multiracial and multicultural backgrounds and have rated them as successful and popular.

Detroit underwrote the cost of the new primers, which are part of a series of readers for the first three grades. Readers in the series include illustrations of both white and Negro children and differ from standard commercial readers in that they place greater emphasis on helping children achieve verbal competence. They attempt to interest children in the story and emphasize social objectives. The books, shorter than the standard primers, provided the children with a sense of accomplishment early in the semester, it was reported.

Officials who evaluated the primers after a year's use in several schools concluded that the readers help children learn to identify words in a shorter time, find greater enjoyment in reading, and improve their oral reading skills. Moreover, the children like the books, Gertrude Whipple, assistant director of the language education department in Detroit schools, reports. In a test of their appeal as compared with other available primers, 80 percent of the culturally deprived pupils selected the new primers.

**The Indiana School Boards Asso**ciation has given school districts data that will enable them to compare local patterns of current expenditure with standard patterns for the State. The data are presented in *Cost of Education Index for Indiana Public Schools*, a recent research bulletin.

The bulletin includes charts showing median expenditures in dollars per pupil for 10 categories, including most of the standard current expenditure accounts and capital outlay, and tables showing expenditures in each of the various accounts as percentages of total current expenditures.

Local school administrators can use their local data to make similar calculations and then make their own comparisons. The bulletin does not suggest that a local school's expenditures should conform to State standards, in one account or in all accounts. It does suggest that local school officials should understand any variations that appear in amounts and be able to explain and justify them, whether the variations are in a big account like instruction or a small one like health services.

The Indiana Association uses methods of studying the internal balance of school budgets that are similar to the methods the Office of Education is using in studies of expenditures in all States and the Nation.

School officials have found that they can improve the administration of their schools by using data and analyses presented in studies of this type. Such studies can also assist administrators in making penetrating analyses of such items as expenditures per pupil for current expenses, pupil-teacher ratios, and average salaries of teachers.

**In some cities, particularly the** larger ones, local affiliates of the National Education Association and the American Federation of Teachers are asking their boards of education for more formal negotiation procedures. The Cleveland Education Association has requested an election to determine the exclusive representative for the teachers. The Detroit Federation of Teachers has petitioned the board of education to hold an election for similar purposes. The Detroit Education Association has circulated a petition outlining grievance procedures which include an appeal to the State Labor Mediation Board. The Los Angeles Federation of Teachers is preparing to conduct a campaign for an election to determine an exclusive bargaining representative.

Denver, the first large city to develop a statement on professional negotiations, has completed its second year of salary talks under the recent policy. In Omaha, current proposals being discussed include the development of a written statement which would recognize the Omaha Education Association as the official representative of the professional staff. Teacher organizations in other cities, among them Chicago and Minneapolis, are presenting demands for collective bargaining or professional negotiation procedures, or both.

One of the questions at issue in these developments is whether an election should be held to determine an exclusive bargaining group or whether an organization should be recognized on the basis of majority membership.

# BONDS

## for educational purposes

*. . . sales, interest rates, et cetera . . .*

## Public Schools

*By* ELMER C. DEERING, *specialist on the financing of school facilities, Division of Elementary and Secondary Education, Office of Education*

FROM THE STANDPOINT of percentage of proposals approved, November 1963 was a bad month for municipal bond elections: voters approved only 46 percent of the more than $2 billion submitted to them. Public schools, however, fared considerably better than other municipal agencies: 62 percent of the school bond issues were approved as compared with only 38 percent of all other municipals. Had it not been for the defeat of a single proposal—$750 million by the State of New Jersey—the percentages approved would have been much higher: 72 percent for all municipal bonds and 75 percent for all school bonds.

**Average net interest cost of Moody-rated bonds sold on the primary market for public schools, by rating only: Annual 1959–60 to 1962–63; monthly, November 1962 to November 1963**

| Period | Aaa | Aa | A | Baa | Ba | All rated bonds |
|---|---|---|---|---|---|---|
| 1959–60 | 3.26 | 3.63 | 3.77 | 4.21 | 4.55 | 3.84 |
| 1960–61 | 2.82 | 3.34 | 3.43 | 3.75 | 3.97 | 3.48 |
| 1961–62 | 2.84 | 3.23 | 3.19 | 3.51 | 3.93 | 3.27 |
| 1962–63 | 2.64 | 2.86 | 2.99 | 3.29 | 3.72 | 3.03 |
| **1962** | | | | | | |
| November | 2.38 | 2.73 | 2.88 | 3.17 | 3.22 | 2.90 |
| December | 2.56 | 2.73 | 2.99 | 3.27 | 3.86 | 3.06 |
| **1963** | | | | | | |
| January | 2.53 | 2.79 | 3.00 | 3.28 | 3.78 | 3.02 |
| February | 2.68 | 2.77 | 3.00 | 3.25 | 3.73 | 2.99 |
| March | 2.47 | 2.76 | 2.93 | 3.22 | 3.61 | 3.00 |
| April | 2.73 | 2.87 | 2.91 | 3.21 | 3.53 | 2.92 |
| May | ..... | 2.74 | 2.94 | 3.31 | 3.38 | 3.02 |
| June | ..... | 2.99 | 3.03 | 3.36 | 3.58 | 3.14 |
| July | ..... | 2.91 | 2.99 | 3.34 | 3.83 | 3.07 |
| August | 2.62 | 2.98 | 3.04 | 3.37 | 3.75 | 3.07 |
| September | ..... | 2.96 | 3.13 | 3.33 | 3.76 | 3.19 |
| October | 2.76 | 3.05 | 3.18 | 3.38 | 3.73 | 3.18 |
| November | 2.89 | 3.14 | 3.25 | 3.46 | ..... | 3.24 |

Source: Sales reported by The Daily Bond Buyer; ratings, by Moody's Investors Service (rated bonds include 75–80 percent of all bonds for public schools).

**Average net interest cost of Moody-rated bonds sold on the primary market for public schools, by rating and by term of bond, for the latest quarter and month available (from same source as preceding table)**

| Term of bond | Aaa | Aa | A | Baa | Ba | All rated bonds |
|---|---|---|---|---|---|---|
| | Latest quarter (July-September 1963) | | | | | |
| Under 15 years | 2.62 | 2.77 | 2.76 | 3.11 | ..... | 2.75 |
| 15–24 years | ..... | 2.94 | 3.05 | 3.30 | 3.75 | 3.10 |
| 25 years and over | ..... | 3.00 | 3.21 | 3.38 | 3.79 | 3.20 |
| All terms | 2.62 | 2.96 | 3.05 | 3.34 | 3.77 | 3.11 |
| | Latest month (November 1963) | | | | | |
| Under 15 years | ..... | 2.68 | 3.12 | 2.84 | ..... | 2.95 |
| 15–24 years | 2.89 | 3.04 | 3.22 | 3.37 | ..... | 3.14 |
| 25 years and over | ..... | 3.25 | 3.36 | 3.53 | ..... | 3.41 |
| All terms | 2.89 | 3.14 | 3.25 | 3.46 | ..... | 3.24 |

The figures reported here cover 259 out of the 267 school bond elections held in November. Voters approved 162 issues totaling $323 million and disapproved 97 issues totaling $200 million; $90 million of this $200 million was in New Jersey's proposal.

More than half of the school bond elections, both in the number and in the amount voted upon, were held at the time of the general election on November 5. On this date voters approved 83 issues totaling $202 million and defeated 59 issues totaling $146 million. Ohio and Florida accounted for nearly 90 percent of the amount approved on November 5. Ohio voters approved 64 issues totaling $99 million and defeated 45 issues totaling $45 million; Florida voters approved 3 issues totaling $80 million and defeated none. Large issues approved in November include these: State of Florida, $50 million; State of Ohio, $35 million; Orange County, Fla., Board of Education, $25 million; and Lubbock, Tex., Independent School District, $10.5 million.

The average net interest cost of 3.24 percent in November was the highest since December 1961, when the average was 3.40 percent.

## Colleges and Universities

*By* W. ROBERT BOKELMAN, *chief, Business Administration Section, Division of Higher Education, Office of Education, and* ELMER C. DEERING

BOND SALES for institutions of higher education in October amounted to slightly more than $43 million, the lowest since February, when the total was $39 million. Of the $43 million, public institutions sold $17,562,000 at an average interest rate of 3.45 percent, and private institutions sold $25,761,000 at an average rate of 3.40

percent. October was the first month in 1963 in which private institutions sold more bonds than public institutions and only the second month in which private institutions had a more favorable interest rate. The tables below show the month's sales—first, by various categories; then, institution by institution.

**Bonds sold for higher education, October 1963: Number and amount of sales and average net interest cost, by type of institutional control, type of financing, type of bond, and type of facility to be constructed**

| Type of financing, bond, and facility | Number of sales | Bonds sold | | Average net interest cost (percent) |
|---|---|---|---|---|
| | | Amount (000) | Percent of total | |
| PUBLIC INSTITUTIONS | | | | |
| Type of financing: | | | | |
| HHFA | 7 | $14,269 | 81.2 | 3.45 |
| Other | 6 | 3,293 | 18.8 | 3.46 |
| Type of bond: Revenue | 13 | 17,562 | 100.0 | 3.45 |
| Type of facility: Auxiliary | 13 | 17,562 | 100.0 | 3.45 |
| Residential | 11 | 16,806 | 95.7 | 3.46 |
| Student center | 2 | 756 | 4.3 | 3.37 |
| Total, public institutions | 13 | 17,562 | 100.0 | 3.45 |
| PRIVATE INSTITUTIONS | | | | |
| Type of financing: | | | | |
| HHFA | 18 | 16,171 | 62.8 | 3.42 |
| Other | 2 | 9,590 | 37.2 | 3.36 |
| Type of bond: Revenue | 20 | 25,761 | 100.0 | 3.40 |
| Type of facility: | | | | |
| Academic (instructional) | 1 | 1,440 | 5.6 | 3.30 |
| Auxiliary | 19 | 24,321 | 94.4 | 3.40 |
| Dispensary | 1 | 100 | .4 | 3.50 |
| Residential | 13 | 20,394 | 79.2 | 3.40 |
| Residential-dining | 2 | 1,235 | 4.8 | 3.37 |
| Student center | 1 | 292 | 1.1 | 3.50 |
| Student center-residential | 2 | 2,300 | 8.9 | 3.40 |
| Total, private institutions | 20 | 25,761 | 100.0 | 3.40 |
| ALL INSTITUTIONS | | | | |
| Type of financing: | | | | |
| HHFA | 25 | 30,440 | 70.3 | 3.43 |
| Other | 8 | 12,883 | 29.7 | 3.39 |
| Type of bond: Revenue | 33 | 43,323 | 100.0 | 3.42 |
| Type of facility: | | | | |
| Academic (instructional) | 1 | 1,440 | 3.3 | 3.30 |
| Auxiliary | 32 | 41,883 | 96.7 | 3.42 |
| Dispensary | 1 | 100 | .2 | 3.50 |
| Residential | 24 | 37,200 | 85.9 | 3.43 |
| Residential-dining | 2 | 1,235 | 2.9 | 3.37 |
| Student center | 3 | 1,048 | 2.4 | 3.41 |
| Student center-residential | 2 | 2,300 | 5.3 | 3.40 |
| Total, all institutions | 33 | 43,323 | 100.0 | 3.42 |

**Bond sales for publicly controlled and privately controlled institutions of higher education in the United States, by institution, October 1963**

| Institution | Amount sold (000) | Term | Average net interest (percent) | Use of funds[1] |
|---|---|---|---|---|
| PUBLIC | | | | |
| Eastern Michigan Univ. | 235 | 1–15 | 3.50 | Res. |
| | 905 | 16–40 | [2] 3.50 | Res. |
| East Carolina Coll. | 232 | 1–14 | 3.31 | Res. |
| | 868 | 15–39 | [2] 3.38 | Res. |
| Cameron State Agricultural Coll. | 80 | 1–9 | 3.19 | Res. |
| | 820 | 10–40 | [2] 3.38 | Res. |
| East Texas State Coll. | 580 | 1–19 | 3.42 | Res. |
| | 2,420 | 20–49 | [2] 3.50 | Res. |
| Texas Technological Coll. | 2,075 | 1–19 | 3.50 | Res. |
| | 5,331 | 20–40 | [2] 3.50 | Res. |
| | 3,260 | 41–49 | [2] 3.38 | Res. |
| Univ. of Washington | 91 | 1–9 | 3.35 | Ctr. |
| | 665 | 10–39 | [2] 3.38 | Ctr. |
| PRIVATE | | | | |
| Ouachita Baptist Coll. | 650 | 1–39 | [2] 3.38 | Res. |
| Leland Stanford Junior Univ. | 3,000 | 1–25 | [2] 3.50 | Res. |
| | 3,750 | 26–40 | [2] 3.38 | Res. |
| Florida Presbyterian Coll. | 100 | 1–40 | [2] 3.50 | Disp. |
| | 292 | 1–40 | [2] 3.50 | Ctr. |
| | 1,363 | 1–40 | [2] 3.50 | Res. |
| St. Xavier Coll. | 1,000 | 1–39 | 3.38 | Res. |
| Univ. of Chicago | 165 | 1–39 | 3.50 | Res. |
| Marion Coll. (Ind.) | 265 | 1–39 | [2] 3.50 | Res. |
| Buena Vista Coll. | 220 | 1–39 | 3.38 | Res.-din. |
| Upper Iowa Univ. | 200 | 1–38 | 3.38 | Res. |
| Gulf Park Coll. | 365 | 1–39 | [2] 3.38 | Res. |
| Columbia Univ. | 8,150 | 1–30 | [3] 3.38 | Res. |
| Keuka Coll. | 1,015 | 1–39 | [2] 3.38 | Res.-din. |
| St. John Fisher Coll., Inc. | 1,440 | 1–40 | [3] 3.30 | Instr. |
| Willamette Univ. | 400 | 1–39 | [2] 3.38 | Res. |
| Howard Payne Coll. | 460 | 1–39 | [2] 3.50 | Ctr.-res. |
| Goddard Coll. | 692 | 1–29 | [2] 3.38 | Res. |
| Bridgewater Coll. | 394 | 1–39 | [2] 3.38 | Res. |
| St. Norbert Coll. | 1,840 | 1–39 | [2] 3.38 | Ctr.-res. |

[1] Abbreviations in this column indicate the following uses: Res., residential; Ctr., student center; Disp., dispensary; Din., dining.
[2] Purchased by Community Facilities Administration, HHFA.
[3] Publicly financed (by the Dormitory Authority of the State of New York).

For the first time in the 2 years on which *School Life* has been reporting data on bonds sold for institutions of higher education, a privately controlled institution has borrowed to finance academic facilities. As the following table shows, St. John Fisher College, in Rochester, N.Y., in October sold bonds totaling $1.4 million to pay for the construction of facilities that will be used for instructional purposes; it sold them through the Dormitory Authority of the State of New York.

## The Language Laboratory

*Continued from page 17*

French—30 students in each group—in the Easton Area High School, Easton, Pa. Each group spent one-fourth of its daily class period in laboratory practice, but each group used a different type or combination of equipment. The group using audioactive-record equipment exclusively excelled only in pronunciation; but the group using audioactive equipment for 80 percent of the practice time and audioactive-record equipment for the rest gave the best performance in listening and speaking.

★ A study of the relative effectiveness of four basic systems of laboratory equipment has been conducted at Colgate University with Federal support under title VI of the National Defense Education Act. It was a closely controlled psychological laboratory experiment designed to explore a number of variables in the teaching of a single linguistic element—French pronunciation—with electronic devices, in the hope of getting information that would be useful in further research in a teaching situation.

The four basic systems were (1) headphones only, (2) audioactive headphone-microphone, (3) record-playback (long-delay playback, not audioactive), and (4) short-delay playback, which gave the sound back to the student after each utterance. A fifth system, which combines record-playback and audioactive headset, unfortunately was not tested; this type has always been standard in commercial language laboratory equipment.

The results of the study suggest that for improvement of pronunciation the audioactive headphone-microphone is probably superior to unactivated headphones; and that differences among the four systems are not necessarily significant, at least not in the extent to which they help students learn to imitate spoken language. Effective as each type showed itself to be in helping the student learn, none showed itself so important as the classroom instructor who is a perceptive observer of his students. The contribution the instructor makes in reinforcing the student's self-correction and practice is indispensable.

Results in the Colgate experiment also suggest that even minor deficiencies in the quality of the sound produced by the laboratory equipment can hamper the student's progress. Similar conclusions have been reached at the Massachusetts Institute of Technology: an experiment there showed that as the frequency response of equipment was reduced, beginning students in French and German were less able to distinguish and repeat syllables. The French students were perceptibly less able to do so; the German students, markedly less. These findings, as well as those in New York City and Easton, Pa., seem to support the idea that the type of equipment is perhaps not nearly so important as the quality of the equipment, materials, and techniques used in the teaching.

★ Joseph R. Reichard at Oberlin College in 1960–61 conducted an experiment with a first-year German program in which practice in the laboratory was closely integrated with work in the classroom. According to Professor Reichard's report, the project has produced evidence that one teacher can teach twice as many students as he formerly did and not impair the quality of the students' accomplishment.

Each week the experimental class, which contained 50 students, spent 3 hours in the classroom with an instructor and 3 hours in laboratory practice under the supervision of an undergraduate assistant. Sessions in the classroom alternated with sessions in the laboratory. Eclecticism prevailed in the instructor's choice of materials and methods, in contradistinction to the more traditional materials and methods used with the control classes.

The control classes contained 25 to 30 students each, met 5 hours a week in regular class sessions with regular instructors, and spent no time with electro-mechanical aids.

Results in all classes were measured by reading and listening tests from the College Entrance Examination Board. To broaden the basis of comparison, the CEEB tests were given also to first-year German classes at Harvard and Princeton. On both the reading and the listening tests, the Oberlin experimental group performed significantly better than either the control classes or the Harvard and Princeton groups. Oberlin now has adopted an alternating-class-and-laboratory pattern for its first-year German courses.

★ Eric Bauer in his master's thesis at DePauw University presents the results of an experiment comparing the achievement in two German classes, one taught in a program that integrated classroom and laboratory work and the other taught without a laboratory. Students in the control group spent 30 percent more time than the experimental group in studying, yet in 5-part tests the experimental group showed 40 percent more improvement in pronunciation and 30 percent more gain in lexical knowledge. In tests 6 months later the experimental group showed that they had retained more of everything; their pronunciation was 50 percent better. Both underachievers and medium achievers made more progress in the experimental group than those in the control did.

In 1960–61 Mr. Bauer, now at Notre Dame, conducted a study to determine which of two sets of laboratory conditions—those controlled by the individual or those controlled for the group—would be more helpful to college students in second-year German. Results of both oral and written tests indicate the advantages of instructional supervision in laboratory sessions, especially during the first 6 weeks of the semester.

★ Evidence that language laboratories and the audiolingual approach have not yet had an opportunity to prove themselves is presented in a report by Joseph Axelrod and Donald N.

Bigelow, who with others in the fall of 1960 visited 46 university language and area centers (these centers are highly specialized programs for teaching the "neglected" languages to persons who will be using these languages—college professors, for example, and representatives of government and industry).

Among other things, the authors reported on the extent to which the centers were using language laboratories and the audiolingual approach; they rated each center, on a 1-to-5 scale (1 for low, 5 for high), on its commitment to the audiolingual approach and, on a 1-to-4 scale, on its use of a laboratory as an integral part of its program. They found 23 centers ranking high, that is, 4 or 5, in their commitment to the audiolingual approach; the rest ranked from 1 to 3. Of the high-ranking centers, 11 integrated the laboratory into their programs, 7 used a laboratory but not as an integral part of their programs, and 5 had no laboratory at all. Of the centers ranking low in their commitment to the audiolingual approach, only 4 integrated the laboratory into their program, 9 did so to some extent, and 10 had no laboratory. Many of the centers have changed their programs and practices since these ratings were made, but the status of the programs at that time is symptomatic of the transition period through which all foreign language programs now are passing.

★ Both the Foreign Service Institute of the Department of State and the Army Language School of the Defense Language Institute, like many colleges and universities, have for many years experimented with various techniques and procedures; and the use they make of language laboratory facilities is based on their own findings, not merely on the experience of others. The fact that both of these schools use these facilities as an integral part of their intensive language courses, even though their classes rarely have more than 10 students and are always taught by native speakers, indicates that they consider regular and frequent practice indispensable to the student who is learning to speak a foreign language.

One recent small experiment in the Army Language School (the West Coast Branch of the Defense Language Institute) compared two classes. Both received the same standard intensive training in class. In addition, the control group was given homework to do with recordings; and the experimental group, which was not given any written material or any homework, regularly used recorded course materials with audioactive laboratory equipment in the classroom. At the end of the experiment, the experimental group showed itself markedly superior to the control group in perception of sound and in pronunciation. In control of grammatical structures, however, the two groups did not differ significantly.

★ George A. C. Scherer and Michael Wertheimer recently completed, under title VI of NDEA, a 2-year experiment at the University of Colorado, on the teaching of German (their report will be published this spring by McGraw-Hill: *A Psycholinguistic Experiment in Foreign Language Teaching*). Their purpose was to determine which groups of students after 2 years of instruction would have more skill in reading and writing—groups taught by an audiolingual approach or groups taught by a conventional grammar-and-reading approach. The researchers measured not only the four skills of listening, speaking, reading, and writing but also such related matters as aptitudes, attitudes, motivations, and assimilation of meaning. In all, 72 measures were computed and correlated in this ingenious experiment, which involved 10 instructors and well over 200 students.

Outside their regular class periods, students in the sections taught by the audiolingual approach practiced one-half hour a day in the language laboratory; students in the control sections studied without the aid of equipment. So that the students in the laboratory would have the same amount of teacher contact time, no tutorial assistance was provided in the laboratory. (This version of audiolingual teaching, in which classroom work is supplemented by nonmonitored library-type work in the laboratory, is usually possible only in colleges and universities. 'Few high schools can accommodate this kind of practice session in the laboratory outside the regular class period.)

The major results of the Colorado experiment include these: In listening, the audiolingual students were far superior to the traditional students at the end of the first year, but this difference disappeared by the end of the second. In speaking, the audiolingual students were far superior at the end of the first year and maintained their superiority throughout the second. In reading, the traditional students were better than the audiolingual students at the end of the first year, but the difference disappeared during the second year. In writing, the traditional students were better at the end of the first year and maintained their superiority during the second year. In translating from German to English, the traditional groups were also superior in both years; but in translating from English to German, the superiority they showed in the first year disappeared by the end of the second. A combination proficiency score on all six skills at the end of each of the four semesters showed no significant differences between the two groups. Other measures showed the experimental groups to be superior in assimilating the meaning of sentences and in associating German symbols with their meanings; they also had more desirable attitudes towards Germans and the speaking of German.

★Long-range studies on the use of language laboratories are being conducted at such universities as Michigan, Indiana, and Tulane. The final conclusions should be forthcoming in the next year or two, but preliminary reports already indicate that the laboratory does indeed help the student to learn a foreign language more efficiently. In fact, Albert Valdman's re-

search at Indiana on the teaching of French is already producing evidence that when students learn units of special programed materials in the laboratory and work regularly with an instructor in small groups in "display" sessions, virtually all of the routine teaching of the language can be turned over to the laboratory. Preliminary results indicate that students in laboratory classes have a higher retention rate than students in conventional classes and a much greater oral proficiency though their reading ability is less.

The Tulane study has produced evidence that a standard audiolingual and laboratory approach can be effective in a liberal arts foreign language curriculum, one that does not neglect reading, writing, and the study of literature. One unusual result reported from that study is that the students transfer to reading the skills they learned in an initial period of audiolingual and language laboratory training.

THROUGH RESEARCH like this in colleges and universities and through practice and trial in the schools, the usefulness of the language laboratory has been validated over and over again, and is constantly being validated now—in situations where both the teachers and administrators recognize the potentialities of the laboratory and plan together to find the best ways of integrating the new methods into the total foreign language curriculum. If in some places the language laboratory is still considered a fad or a status symbol, lack of careful and cooperative planning by administrators and teachers is probably to blame.

For at least 15 years the materials, methods, and procedures needed for effective use of the language laboratory have been evolving. For levels I and II they are now well developed, but there is still a great need for well-trained teachers and for enough facilities to give first- and second-year language students the practice time they need. For more advanced courses—levels III and IV and beyond—much progress also has been made in the development of materials and procedures, but before the nationwide situation can be called anywhere near satisfactory, we will have to expend much more time and pioneering effort.

All during the time when most secondary schools have struggled to adapt to changes and to meet the demands placed upon them, college and university professors have played an uneven role: they have shown themselves both enlightened and uninformed; some have been trail blazers while others have put up obstacles to change. What the situation is today in foreign language education at all levels is placed in perspective in *Curricular Change in the Foreign Languages*, published last fall by the College Entrance Examination Board.

The famous American know-how that produced the language laboratory is unfortunately not present in all school systems to receive the laboratory when it arrives. Teachers need to be taught how to use the new equipment and the new materials; but many States, though they have approved purchases of equipment and materials with the aid of Federal funds provided under title III of the National Defense Education Act, have been less eager to use funds available under the same title to provide inservice programs for the teachers.

Despite the problems and the handicaps, however, schools and colleges both in this country and abroad have made tremendous strides toward the fully effective use of equipment and materials in foreign language classrooms. We already know that the language laboratory can be effective; what remains to be seen is how long it will take for schools not only to acquire adequate laboratory facilities but to learn how to use them.

# School Library Reporter

RICHARD L. DARLING

THE RECENT PUBLICATION by Rutgers University Press of Mary Virginia Gaver's *Effectiveness of Centralized Library Services in Elementary Schools* makes available to a large audience a significant research study on school libraries. This report, available earlier only in a limited edition of 200 mimeographed copies, was supported by a grant from the cooperative research program of the U.S. Office of Education. Though many educators have assumed that school libraries are essential in effective elementary school education, a majority of the Nation's elementary schools still provide classroom book collections only. Miss Gaver's study should contribute to wider recognition of the importance of elementary school libraries.

Miss Gaver had two purposes in making the study: First, to develop criteria for evaluating school library materials and services, and tests and scoring sheets for measuring pupils' reading and knowledge of library use; second, to study the scores and ratings obtained with these special criteria and tests in six cooperating schools to determine (1) their relationship to children's scores on standardized achievement tests and to such community factors as socioeconomic level, and (2) their usefulness in differentiating among schools with dif-

*Dr. Darling is specialist for school libraries, Library Service Branch, Office of Education.*

ferent levels of development of school library services. Miss Gaver has not only provided valid instruments which can be used in further research, but also shown how much the elementary school library can contribute to the educational achievement of children.

Six schools participated in the study; two with classroom collections of books only; two with centralized library collections but no professional librarians; and two with centralized school libraries, school librarians, and a comprehensive program of library services. In most measures used, the schools in the third category were found to be superior to those in the other two categories.

In the two schools with comprehensive programs more money was spent on materials, the trade and reference books were superior in quality, there were more and better supplementary textbooks, and both resources and activities were more accessible to pupils and teachers. Children's reading was more extensive and more varied. Comparisons of the pupils' scores on the Iowa Test of Basic Skills indicated that they had made greater gains in education than pupils in the other four schools.

Miss Gaver has made several minor changes in the Rutgers' edition of her study and has added a new final chapter, "Afterthoughts and Next Steps." In it she reports subsequent research, outlines important aspects of elementary school library programs, and presents proposals for providing library service in local elementary schools. She concludes with a challenge to citizens and educators to provide the school libraries and personnel for which she has demonstrated the value.

TWO regional accrediting associations discussed school libraries at their 1963 meetings. They were the Southern Association of Colleges and Schools, which included papers on both elementary and secondary school libraries on its program, and the Northwest Association of Secondary and Higher Schools. Both meetings were held in December.

*Statistic of the Month*

## Professional staff in U.S. Colleges

The number of faculty members and other professional staff members in institutions of higher education is rising, but not so fast as the number of students. In the 1961–62 academic year 427,800 persons were on the professional staffs of the 2,044 institutions of higher education in the United States—12 percent more than 2 years earlier and 74 percent more than 10 years earlier. For student enrollments, however, the rates of increase were greater—14 percent and 84 percent, respectively.

This is one of several comparisons made in one or the other of two recent reports by the Office of Education on the professional staffs of colleges and universities.[1] Among the other comparisons are these:

- The number of professional positions in 1961–62 was greater than the number of persons filling them—475,800 positions compared with 427,800 persons—because some staff members were serving in more than one capacity.
- Publicly controlled institutions, compared with the privately controlled, had the larger percentage of these positions: 55 percent compared to 45 percent.
- Faculty members engaged in resident instruction in degree-credit courses account for most of the professional staff in colleges and universities; in 1961–62 two out of three staff members were in this group. Because they make up such a substantial part of the staff, and because of the great interest of school administrators, research workers, and the public in general in the supply of college teachers, the Office of Education has made projections of resident instructional staff in degree courses from 1962–63 to 1970–71. As the chart on the next page shows, the Office expects this part of the professional staff to be 60 percent higher in 1970–71 than it was in 1960–62. The figures on which the chart is based, taken from the two reports already mentioned, are as follows:

| | |
|---|---|
| 1949–50 | 191,396 |
| 1951–52 | 184,826 |
| 1953–54 | 208,547 |
| 1955–56 | 227,929 |
| 1957–58 | 260,486 |
| 1959–60 | 283,080 |
| 1961–62 | 312,700 |
| 1962–63 [2] | 334,000 |
| 1963–64 [2] | 345,000 |
| 1964–65 [2] | 370,000 |
| 1965–66 [2] | 398,000 |
| 1969–70 [2] | 480,000 |
| 1970–71 [2] | 501,000 |

- Publicly controlled institutions, compared to the privately controlled, generally have a smaller percentage of their staffs in administration, student personnel services, and resident instruction in degree-credit courses—but a larger percentage in extension—as the tabulation shows:

| | Total | Public | Private |
|---|---|---|---|
| | % | % | % |
| General administration | 4.4 | 2.9 | 6.2 |
| Student personnel services | 3.5 | 3.0 | 4.2 |
| Resident instruction: | | | |
| Degree credit | 65.7 | 62.2 | 70.1 |
| Non-degree credit | 2.9 | 3.6 | 2.0 |
| Extension | 6.6 | 10.7 | 1.5 |
| Other faculty | 2.5 | 3.2 | 1.5 |
| Library staff | 2.3 | 2.1 | 2.6 |
| Organized research staff | 10.5 | 10.5 | 10.5 |
| Instructional staff for elementary and secondary education | 1.6 | 1.8 | 1.4 |
| Total | 100.0 | 100.0 | 100.0 |

If the extension staff is omitted, the distribution of staff members in the two types of institutions is similar except that administration still claims a smaller percentage in public institutions. In 1961–62 about 6 percent of the professional staff in private institutions were holding administrative positions, compared to only 3 percent in public institutions. The fact that most public institutions generally are larger may explain this difference: in 1961–62 the average public institution had more than twice as many faculty members as the average private institution, and more than twice as many students.

The percentage of women on the faculty for resident instruction has declined steadily since the end of World War II, from 30 percent in 1945–46 to 20 percent in 1961–62.—Rose Marie Walker, educational statistician, Office of Education.

[1] *Faculty and Other Professional Staff in Institutions of Higher Education, 1961–62 Summary Report* (OE–53014–62) and *Instructional Staff in Institutions of Higher Education Projected to 1970–71* (OE–53018).

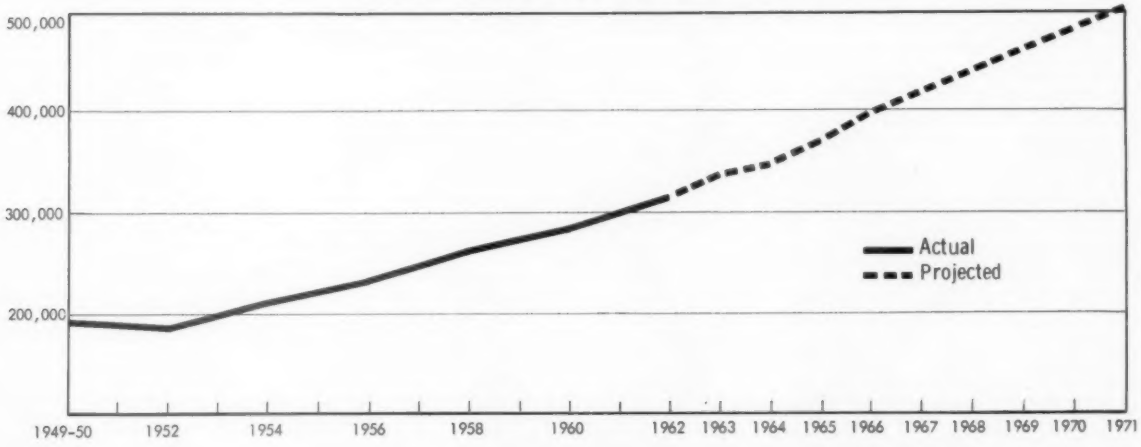
[2] Projected.

**Number of positions held by members of faculty and other professional staff in colleges and universities, by type of institutional control, and percentage of pos¹tions held by women, in the United States and its outlying parts, 1961–62**

| Type of position | Total | In public institutions | | In private institutions | Positions held by women |
|---|---|---|---|---|---|
| | | Number | Percent of total | | |
| | *Number* | | | *Number* | *Percent of total* |
| All positicns | 475,810 | 264,193 | 55.5 | 211,617 | 22.0 |
| Staff for general administration | 20,686 | 7,603 | 36.8 | 13,083 | 19.5 |
| Staff for student personnel services | 16,722 | 7,914 | 47.3 | 8,808 | 42.6 |
| Faculty for resident instruction: | | | | | |
| Degree-credit courses | 312,687 | 164,199 | 52.5 | 148,488 | 19.6 |
| Instructor or above | 266,624 | 136,594 | 51.2 | 130,030 | 19.7 |
| Full-time | 178,632 | 98,107 | 54.9 | 80,525 | 20.6 |
| Part-time | 87,992 | 38,487 | 43.7 | 49,505 | 17.8 |
| Full-time equivalent of part-time | 29,645 | 13,692 | 46.2 | 15,953 | 19.1 |
| Junior staff | 46,063 | 27,605 | 59.9 | 18,458 | 19.5 |
| Other than degree-credit courses | 13,632 | 9,502 | 69.7 | 4,130 | 22.8 |
| Extension staff | 31,409 | 28,132 | 89.6 | 3,277 | 25.5 |
| Giving courses | 15,236 | 12,653 | 83.0 | 2,583 | 18.1 |
| Other staff | 16,173 | 15,479 | 95.7 | 694 | 32.5 |
| Other faculty (includes staff for courses by mail, radio, or TV; short courses; and individual lessons) | 11,771 | 8,514 | 72.3 | 3,257 | 23.3 |
| Library staff | 11,025 | 5,592 | 50.7 | 5,433 | 65.3 |
| Staff for organized research | 50,058 | 27,857 | 55.6 | 22,201 | 13.7 |
| Instructional staff for elementary or secondary education | 7,820 | 4,880 | 62.4 | 2,940 | 55.7 |
| Total number of different persons holding the positicns above [1] | 427,833 | 235,851 | 55.1 | 191,982 | 22.0 |

[1] The sum of the numbers of professional positions exceeds the number of different persons because some professional staff members serve in more than one capacity. "All positions" represents the sum of all types of positions as classified in the survey questionnaire.

Total Instructional Staff for Resident Degree-Credit Courses:
United States and Outlying Parts, 1949-50 to 1970-71



# PUBLICATIONS CHECKLIST

## Office of Education

### For Sale

**Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Remittance must accompany order.**

*Bond Sales for Public School Purposes, July 1, 1962–June 30, 1963,* by Elmer C. Deering, 1963, 11 pp., 15 cents (OE–22009–63).

*Digest of Annual Reports of State Boards for Vocational Education to the Office of Education: Fiscal Year Ended June 30, 1962, Summary of Statistical and Financial Information,* 1963, 58 pp., 45 cents (OE–80008–62).

*Education in France,* by George A. Male, 1963, 205 pp., 75 cents (OE–14091).

*Improving the Learning Environment: A Study on the Local Preparation of Visual Instructional Materials,* by Gene Faris, John Molstad, and Harvey Frye, 1963, 148 pp., $1 (OE–34031).

*Nonproperty Taxation for Schools: Possibilities for Local Application,* by Albert L. Alford, 1963, 144 pp., 55 cents (OE–22021).

*Preliminary Statistics of State School Systems, 1961–62,* by Carol Joy Hobson and Samuel Schloss, 27 pp., 20 cents (OE–20006–62).

*Reporter: Clearinghouse of Studies on Higher Education,* No. 6, by Winslow R. Hatch and Alice L. Richards, 1963, 53 pp., 40 cents (OE–50004–6).

*Research in Reading for the Middle Grades: An Annotated Bibliography,* by Warren G. Cutts, 1963, 80 pp., 30 cents (OE–30009).

*Research in Reading Readiness,* by Doris V. Gunderson, 1964, 38 pp., 20 cents (OE–30013).

*Science Equipment and Materials: Science Kits,* by Albert Piltz and William J. Gruver, 1963, 26 pp., 15 cents (OE–29049).

*Statistics of Land-Grant Colleges and Universities: Year Ended June 30, 1961,* by George Lind, 1963, 124 pp., 75 cents (OE–50002–61).

*Stronger Schools Through Guidance, Counseling, Testing, State Leadership, Instructional Resources, and Equipment: A Brief Explanation of Titles III and V–A of NDEA,* 1963, 19 pp., 15 cents (OE–20021A).

### Free

**Request single copies from the Publications Distribution Unit, U.S. Office of Education, Washington, D.C., 20202.**

*Aids for Teaching Science: Evidence of a Good Science Program,* by the specialists for science, elementary and secondary education, Bureau of Educational Research and Development, September 1963, 10 pp. (OE–29051).

*Bible Reading in the Public Schools,* by August W. Steinhilber, reprint from *School Life,* October 1963, 4 pp. (OE–20058).

*Changes in Administrative and Faculty Salaries from 1960–61 to 1962–63, by W.* Robert Bokelman and Louis A. D'Amico, September 1963, 18 pp. (OE–52004–8).

*The Recommendations of the 26th International Conference on Public Education Sponsored by UNESCO and the International Bureau of Education, Geneva, July 1963, Information on Education Around the World, No. 71,* October 1963, 17 pp. (OE–14034–71).

*Selected References on Facilities and Equipment for Handicapped Children,* by W. Edgar Martin, October 1963, 18 pp. (OE–21012).

*Summary Report: Faculty and Other Professional Staff in Institutions of Higher Education, 1961–62,* by the Higher Education Surveys Section, Division of Educational Statistics, November 1963, 6 pp. (OE–53014–62).

*Summary Report on Survey of Students Enrolled for Advanced Degrees: Fall 1962,* by the Higher Education Surveys Section, Division of Educational Statistics, October 1963, 7 pp. (OE–54009–62).

*What Is a Good Nursery School?,* by Lillian L. Gore, reprint from *School Life,* June 1963, 6 pp. (OE–10028).

## Other Agencies

**Purchase from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Remittance must accompany order.**

#### Child welfare

*The Abused Child,* Department of Health, Education, and Welfare, 1963, 10 pp., 10 cents, FS 14.108:Ab 9.

A description of the steps recommended by the Children's Bureau to assure the identification, protection, and treatment of children who have been injured by their parents or others responsible for their care.

*Children and Neglect: Hazardous Home Conditions,* Department of Health, Education, and Welfare, 1963, 59 pp. 40 cents, FS 14.202:C43.

A study of the facts involved in evaluating a neglect case and arriving at plans for appropriate action.

#### Guidance

*Federal Career Directory: A Guide for College Students,* Civil Service Commission, 1963, 84 pp., 60 cents, CS 1.7/4:C 18/963.

Contains information on student trainee programs, the method of filing for Civil Service positions, promotion plans and pay scales in the Service. It includes a list of major Federal career occupations and a description of each job.

*The Foreign Service Officer,* Department of State, 1963, 36 pp., 30 cents, S 1.69:113.

Describes the employment opportunities in the Foreign Service—classes, pay, promotion, allowances, leave, and other benefits as well as the type of work.

*Helping Rural Youth Choose Careers,* Department of Agriculture, 1963, 8 pp., 5 cents, A 1.38:771/2.

Points up some of the more important shifts in employment of special concern for the future opportunities of young people in rural areas.

#### Health and safety

*Accidents and Children,* Department of Health, Education, and Welfare, 1959, 19 pp., 15 cents, FS 3.210:48.

Describes the kinds of accidents that children suffer and tells when accidents are most likely to occur. Points out some of the things parents can do to prevent accidents, especially in the home.

*The Food We Eat,* Department of Agriculture, 1963, 16 pp., 10 cents, A 1.38:870/3.

Tells the story of the food we eat: what we buy, what we pay for it, how our demands determine the kinds and quantities of food developed.

*The Federal Government's Role in Providing Medical Care to Citizens of the United States,* U.S. Senate, 1963, 112 pp., 35 cents, 88–1:S.doc. 31.

Contains background information on and excerpts from the 1963–64 national high school debate on "What Should Be the Role of the Federal Government in Providing Medical Care to the Citizens of the United States?"

#### Language Guides:

*Burmese Phrase Book,* Department of Defense, 1963, 114 pp., 35 cents, D 101.11:30–632.

*Danish: A Guide to the Spoken Language,* Department of Defense, 1963, 87 pp., 30 cents, D 101.11:30–311.

*French: A Guide to the Spoken Language,* Department of Defense, 1963, 61 pp., 25 cents, D 101.11:30–302.

*Greek: A Guide to the Spoken Language,* Department of Defense, 1963, 61 pp., 25 cents, D 101.11:30–350.

*Italian,* Department of Defense, 1963, 61 pp., 25 cents, D 101.11:30–303.

*North African Arabic: A Guide to the Spoken Language,* Department of Defense, 1963, 53 pp., 25 cents, D 101.11–321.

*Turkish Phrase Book,* Department of Defense, 1963, 137 pp., 55 cents, D 101.11:30–618.

Pocket-size books prepared for the use of servicemen. They contain instructions for carrying on simple conversations and include words and phrases on such subjects as greetings, location, direction, numbers, money, and time.



U.S. GOVERNMENT PRINTING OFFICE:1964